

FMC Corporation
1735 Market Street
Philadelphia PA 19103

FMC Corporation

215.299.6000 phone
215.299.6947 fax
www.fmc.com

Via Federal Express

February 29, 2016

Mr. Dennis J. McLerran, Regional Administrator
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue
Seattle, WA 98101

Subject: RCRA Interim Status 2015 Groundwater Monitoring Assessment Report FMC Idaho
LLC - EPA ID No. IDD 07092 9518

Dear Mr. McLerran:

Enclosed please find the 2015 Annual Groundwater Monitoring Assessment Report for the FMC facility in Pocatello, Idaho (EPA ID No. IDD070929518). This report is submitted in accordance with the requirements of 40 CFR 265.94 for a facility in the assessment monitoring program. FMC has nine waste management units (WMUs) at the property that are subject to groundwater monitoring. All of these WMUs have been closed in accordance with RCRA requirements.

A comparison of the 2015 groundwater level measurements with previous data indicates that there have been no significant changes in the groundwater flow direction in 2015 and the RCRA groundwater monitoring well network remains adequate to detect releases. Groundwater chemistry results are analyzed and evaluated using a pre-defined set of statistical procedures. Based on the evaluation of the 2015 groundwater monitoring data, there were no significant changes in groundwater chemistry from data submitted in previous reports.

If you have any questions, please contact me at 215/299-6210.

Sincerely,



Marguerite Carpenter, PhD
Associate Director, Environment

Enclosure

cc: Heather Valdez, EPA (w/enclosure)
Doug Tanner, IDEQ (w/enclosure)
RCRA/CERCLA Manager, Shoshone-Bannock Tribes (w/enclosure)



**RCRA INTERIM STATUS
2015 GROUNDWATER
MONITORING ASSESSMENT**

Prepared for:

FMC Idaho LLC
P.O. Box 4111
Pocatello, ID 83202

February 2016

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	ii
LIST OF FIGURES	iii
LIST OF APPENDICES.....	iv
1. INTRODUCTION	1-1
2. WMU STATUS UPDATE	2-1
3. EVALUATION OF GROUNDWATER FLOW DIRECTION	3-1
4. SUMMARY OF ANALYSES OF GROUNDWATER DATA	4-1
4.1 GENERAL	4-1
4.2 STATISTICAL ANALYSES.....	4-7
5. REFERENCES	5-1

LIST OF TABLES - (TABLES FOLLOW TEXT)

TABLE 1.	2015 WMU STATUS AND GROUNDWATER MONITORING NETWORK
TABLE 2.	GROUNDWATER LEVELS - 2015
TABLE 3.	SUMMARY OF STATISTICAL ANALYSES RESULTS - 2015

LIST OF FIGURES - (FIGURES FOLLOW TABLES)

- FIGURE 1. WASTE MANAGEMENT UNIT AND RCRA WELL LOCATIONS
- FIGURE 2. FACILITY MAP
- FIGURE 3. GROUNDWATER CONTOUR MAP – FEBRUARY 2015
- FIGURE 4. GROUNDWATER CONTOUR MAP - APRIL 2015
- FIGURE 5. GROUNDWATER CONTOUR MAP – AUGUST 2015
- FIGURE 6. GROUNDWATER CONTOUR MAP - NOVEMBER 2015
- FIGURE 7. HYDROGRAPHS FOR MONITORING WELLS FOR WMU #3 -
POND 15S
- FIGURE 8. HYDROGRAPHS FOR MONITORING WELLS FOR WMU #5 -
SLAG PIT SUMP
- FIGURE 9. HYDROGRAPHS FOR MONITORING WELLS FOR WMU #7 -
POND 8S
- FIGURE 10. HYDROGRAPHS FOR MONITORING WELLS FOR WMU #8 AND #11 -
PHASE IV PONDS AND POND 8E
- FIGURE 11. HYDROGRAPHS FOR MONITORING WELLS FOR WMU #9 -
POND 9E
- FIGURE 12. HYDROGRAPHS FOR MONITORING WELLS FOR WMU #10 - POND
16S
- FIGURE 13. HYDROGRAPHS FOR MONITORING WELLS FOR WMU #14 - POND
17
- FIGURE 14. HYDROGRAPHS FOR MONITORING WELLS FOR WMU #15 - POND
18 CELL A
- FIGURE 15. ELEMENTAL PHOSPHORUS CONCENTRATIONS AT WELL 108/108A
- FIGURE 16. ELEMENTAL PHOSPHORUS CONCENTRATIONS AT WELL 122

LIST OF APPENDICES

APPENDIX A	STATISTICAL TABLES AND TIME SERIES PLOTS
APPENDIX B	2015 GROUNDWATER QUALITY TABLES
APPENDIX C	EPA GROUNDWATER MONITORING REDUCTION LETTER - JUNE 13, 1995
APPENDIX D	DATA VALIDATION AND USABILITY SUMMARIES – 2015 RCRA GROUNDWATER LABORATORY ANALYSES (IN CD POCKET)

**RCRA INTERIM STATUS
2015 GROUNDWATER
MONITORING ASSESSMENT**

1. INTRODUCTION

This report presents an evaluation of groundwater quality monitoring data obtained at the FMC Idaho LLC facility in Pocatello, Idaho (EPA ID # IDD070929518). It has been prepared in accordance with the interim status requirements of the Resource Conservation and Recovery Act (RCRA) pursuant to 40 CFR 265 Subpart F and reflects data collected through the 2015 calendar year.

There are nine waste management units (WMUs) at the property that are subject to the RCRA groundwater monitoring standards. All nine of the WMUs were closed prior to 2006 and post-closure monitoring continued during 2015. Figure 1 is a map of the facility, depicting the locations of the subject WMUs and associated groundwater monitoring wells. Figure 2 shows the facility and immediate surroundings, including the locations of former ponds over which certain of the subject WMUs were constructed. As part of the plant's overall RCRA compliance program, the groundwater monitoring program is being conducted pursuant to 40 CFR 265.90(d); as required by 40 CFR 265.90(d), assessment monitoring has been conducted at the facility to satisfy the requirements of 40 CFR 265.93(d)(4) and 265.93(d)(7). This report contains the results of this assessment program for the 2015 calendar year and is being submitted to meet the reporting requirements of 40 CFR 265.94(b)(2).

In addition to the RCRA program, FMC performs groundwater monitoring at the plant property pursuant to the Calciner Ponds Remedial Action Groundwater Monitoring Plan (FMC, 2008b) and the Interim Comprehensive Environmental Response, Compensation and

Liability Act (CERCLA) Groundwater Monitoring Plan (FMC, 2010b) in anticipation of implementing the interim groundwater remedy for the FMC Operable Unit (OU) of the Eastern Michaud Flats (EMF) Superfund site. Data obtained from the Calciner Pond and CERCLA well networks have been used to augment data from the RCRA wells in developing the groundwater elevation contour plots included in Figures 3 through 6.

Generally, the methodologies used to evaluate groundwater flow direction and assessment monitoring data in this report are the same as those utilized in the RCRA Interim Status Groundwater Monitoring Assessment reports for the years 1992 through 2014 (FMC, 1993 through FMC, 2015). These reports should be consulted for greater detail concerning the history of the monitoring program, sampling and analytical methods, and the basis for selection of statistical evaluation techniques.

Based on evaluation of the 2015 groundwater monitoring data, there were no discernable differences in groundwater flow patterns compared to prior years. Closed RCRA units (WMUs #3, 5, 7, 8, 9, 10, 11, 14 and 15) did not exhibit evidence of releases in 2015. WMU #7 (Pond 8S) wells have continued to show improved water quality when compared to historical concentrations.

Section 2 of this report provides an update on the status and RCRA monitoring wells associated with each WMU subject to groundwater monitoring requirements.

Section 3 presents updated information on the direction of groundwater flow and groundwater surface elevations in the vicinity of RCRA units.

Section 4 describes the overall evaluation of 2015 groundwater monitoring data, the statistical analyses performed, and updates the results and conclusions drawn in previous groundwater assessment reports for the years 1992 through 2014 (FMC, 1993 through FMC, 2015). A list of references used in the preparation of this document is contained in Section 5.

Appendix A presents the statistical analyses tables and time-series plots. The statistical analyses and time series plots include data collected since the RCRA groundwater monitoring program began in September 1991 and for additional / replacement RCRA monitoring wells beginning in March 1994, December 1995, September 1997 (for Ponds 17 and 18) and June 2015 (replacement wells 108A and 121A). Although earlier data exist for some of the monitoring wells within the RCRA well network, these data were selected to provide a common starting point, and to allow for increased comparability between data sets. Appendix B provides a tabulation of all groundwater quality data for the RCRA monitoring program in 2015. Appendix C contains correspondence from the EPA Region 10 RCRA Program regarding reduction in the scope of FMC's RCRA groundwater monitoring program.

Appendix D contains the Data Validation and Usability Summaries for the 2015 RCRA groundwater laboratory analyses, along with the laboratory reports, and is provided in electronic format (CD) only.

2. WMU STATUS UPDATE

This section provides an update on the status of FMC's WMUs subject to RCRA interim status groundwater monitoring requirements. The status of each WMU and its groundwater monitoring network is presented in Table 1. Each subject WMU and associated RCRA monitoring well locations are shown on Figure 1.

Post-closure groundwater monitoring continued at the WMUs subject to RCRA groundwater monitoring throughout 2015. The timing of the closures of those WMUs is summarized below:

- The final closure of Pond 8S was completed in 1999;
- The final closure of Pond 9E was completed in 2000;
- The final closures of Pond 16S, Pond 15S, Pond 8E and the Phase IV ponds were completed in 2004; and
- The final closures of Pond 17, Pond 18 (Cell A closure in-place and Cell B closure by removal), and the slag pit sump were completed in 2005.

Four quarters of groundwater monitoring and an assessment of the groundwater data were conducted for all of the above discussed waste management units. Pursuant to the completion of the Pond 18 Cell B closure by removal and the Pond 18 Cell A post-closure plan (FMC, 2004b), wells 175 and 176 are not included in the Pond 18 Cell A post-closure groundwater monitoring. As described in the RCRA 2008 Groundwater Monitoring Assessment (FMC, 2008a), wells 175 and 176 were sampled and analyzed during 2008 but monitoring of these wells under FMC's RCRA groundwater program was discontinued beginning in 2009. Pond 18 Cell A groundwater monitoring will continue per its post-closure plan.

Pursuant to the remedial actions set forth in the Interim Amendment to the Record of Decision for the EMF Superfund Site FMC Operable Unit (IRODA; Environmental Protection Agency [EPA], 2012) and a Remedial Design (RD)/Remedial Action Unilateral

Administrative Order (UAO) issued by EPA on June 10, 2013 (EPA, 2013) which became effective on June 20, 2013, FMC prepared and submitted to EPA the required soil remedial action RD documents. In September 2014, EPA approved the remedial design and Remedial Action Work Plan for the Site-Wide Grading phase of the soil remedial action which, among numerous elements, identified certain RCRA pond post-closure monitoring systems that are located within areas that require re-grading to implement the IRODA remedy. Former and current RCRA groundwater monitoring wells have been abandoned or modified (casing extended or “raised”) due to the required re-grading including grading to integrate the caps that will be constructed to implement the CERCLA soil remedy within areas adjacent to the RCRA ponds.

Seven former RCRA groundwater monitoring wells that are no longer part of FMC’s RCRA groundwater monitoring program (refer to Section 3.2.1.1 of the Groundwater Current Conditions Report for the FMC Plant OU [FMC, 2009b] for the history leading to the current RCRA groundwater monitoring well network) have been abandoned pursuant to Specification 02050 – Site Clearance (Soil Remedial Action - Remedial Design Report, Appendix C; MWH, 2014). The former RCRA groundwater monitoring wells that have been abandoned are:

- Wells 170, 179, 181, 182 (Pond 17);
- Wells 130, 137 (Phase IV/8E); and
- Well 116 (Pond 8S).

Fifteen RCRA groundwater monitoring wells, that are part of FMC’s RCRA groundwater monitoring program, were scheduled for adjustments in 2015 and 2016 to allow integration into the CERCLA soil remedy. The following lists the current status of these RCRA groundwater monitoring wells:

- Pond 17: Wells 172 (raised in 2015), 180 (raised in 2015);
- Phase IV/8E: Wells 104 (accessible, not raised), 114 (raised in 2015), 131 (accessible, not raised), 168 (raised in 2015);
- Pond 15S: Well 115 (raised in 2015);

- Pond 8S: Wells 155 (raised in 2015), 156 (accessible, not raised); and
- Slag Pit Wells: Wells 108 (replaced with 108A as described below), 121 (replaced with 121A as described below), 122 (raised in 2015), 123 (raised in 2015).

Except for wells 104, 131 and 156, the above wells were not accessible for water level elevation measurements in 2015 because of casing extensions installed as required by CERCLA remedial actions. Casing extensions were removed to allow collection of groundwater samples.

In addition, FMC notified EPA on June 3, 2015 that the casings at monitoring wells 108 and 121 had been damaged in the course of recent remedial action work. As described above, monitoring wells 108 and 121 are two of the four monitoring wells in the RCRA Slag Pit Sump groundwater monitoring network. As described in FMC's June 17, 2015 follow-up letter to EPA, during the site-wide grading phase work to backfill around the casing extensions at these monitoring wells, the well casings were damaged to an extent that the quarterly monitoring normally conducted at those wells could not be performed in early June 2015 during the regularly scheduled RCRA groundwater monitoring event. Attempts to perform downhole repairs were not successful; therefore, these wells were abandoned and replaced with new monitoring wells.

The replacement wells were installed and constructed to conform as closely as possible to the damaged wells to provide for data comparability to the extent practicable. This means that they were installed as close as practicable to the existing wells, and replicated wells 108 and 121 in terms of their construction (e.g., 4-inch PVC casing, screen length, slot size and elevation for top/bottom screen, and annular materials). The replacement wells are designated 108A and 121A respectively. Following construction and development of the replacement wells, groundwater sampling of the new wells in accordance with the Slag Pit Sump post-closure plan was performed at wells 108A and 121A during the second, third and fourth quarterly 2015 RCRA groundwater monitoring events.

Following completion of all remedial activities related to the above wells, the new top of casing measuring point elevations will be surveyed for the purpose of determining future water level elevations from the quarterly water level measurements; and the wells will be re-integrated into the water level monitoring program.

3. EVALUATION OF GROUNDWATER FLOW DIRECTION

A comparison of the 2015 data with pre-2015 data indicates that there have been no significant changes in groundwater flow direction during 2015, and the RCRA groundwater monitoring well network remains adequate to detect releases from the RCRA surface impoundments.

To ensure the most accurate representation of groundwater flow, a complete set of facility-wide wells screened in the uppermost aquifer was used to prepare the groundwater elevation contour plots. Water levels measured in the RCRA and site-wide wells in 2015 are presented in Table 2.

Figures 3 through 6 present groundwater elevation contour plots for the February, April, August and November 2015 groundwater sampling events. At all WMUs, the groundwater flow directions derived through 2015 water-level measurements were similar to those observed in previous years. As may be seen from an examination of the figures (3 through 6), groundwater flow is predominantly to the northeast throughout most of the facility, with a northern component from the Bannock Range. The seasonal water level fluctuation, as evaluated based on the difference between the February and August measurements, averages about 1.16 feet across the facility. In general, the 2015 water level elevations for each quarter were within 0 to 1 foot of those measured in 2014. Hydrographs for the monitoring wells for each of the WMUs are provided in Figures 7 through 14. As described in Section 2, wells 175 and 176 are not included in the Pond 18 Cell A post-closure groundwater monitoring and thus those wells are no longer included on the hydrograph for Pond 18 Cell A.

4. SUMMARY OF ANALYSES OF GROUNDWATER DATA

Section 4.1 provides a general evaluation of the groundwater chemistry for 2015 from the RCRA groundwater monitoring program. Section 4.2 summarizes the methodology and results of the statistical analyses of the 2015 RCRA groundwater monitoring data.

4.1 GENERAL

This section provides a discussion of the groundwater analytical results for 2015 from the RCRA monitoring program. Arsenic, fluoride and selenium results are considered in detail in Section 4.2 (Statistical Analyses). The 2015 RCRA monitoring results are interpreted with reference to the comprehensive evaluation of site wide groundwater quality completed in the Groundwater Current Conditions Report for the FMC Plant OU (FMC, 2009b).

Field Parameters

Temperature, specific conductance, pH, dissolved oxygen and turbidity are measured during well purging prior to collecting groundwater samples. Stabilization of these measurements is indicative that the well is producing formation water unaffected by casing water chemistry. Results for 2015 field parameter measurements (values measured following purging) are tabulated in Appendix B. The majority of field parameters measured during 2015 were consistent with results obtained in previous years. The only RCRA network well that shows significant field turbidity (values greater than 5 NTU) is well 131. Groundwater temperature, pH, and turbidity typically show a small amount of seasonal variability, but little evidence of longer term changes with the exception of wells downgradient from the former slag pit sump and particularly Slag Pit Sump well 108 (replaced in 2015 by well 108A, as described in Section 2). As described in greater detail in the Groundwater Current Conditions Report for the FMC Plant OU (FMC, 2009b), the temperature of groundwater beneath and downgradient from the slag pit was previously elevated due to the thermal load applied from hot slag tapping during plant production. Groundwater temperatures at well 108/108A and other wells downgradient from the slag pit have steadily decreased since the thermal load was removed in 1999-2000 when conversion to slag ladling was completed on all four furnaces. Groundwater temperatures measured at well 108/108A were above 28° C prior to

2000, remained below 18° C in 2015, and will eventually return to the background range of 12 to 16.5° C. The 4Q15 replacement well 108A groundwater temperature of 16.6° C was the lowest recorded in the period of record for well 108/108A (since 1990).

Specific conductance (SC) values show longer-term trends (increasing or decreasing) at some wells within the RCRA and CERCLA well networks in the FMC Western Ponds Area. A qualitative review shows that SC follows trends for the common ions (e.g., potassium, chloride and sulfate) as described in greater detail in the Groundwater Current Conditions Report for the FMC Plant OU (FMC, 2009b).

Common Ions and Nutrients

Common ions (potassium, chloride and sulfate) and nutrients (ammonia, nitrate and orthophosphate / total phosphorus) data for 2015 are also reported in Appendix B. Overall, the 2015 data for common ions and nutrients are generally comparable to monitoring data from previous years, with some variability observed at most wells.

As described in greater detail in the Groundwater Current Conditions Report for the FMC Plant OU (FMC, 2009b), the highest concentrations of sulfate and nitrate in groundwater at the Western Ponds Area are encountered downgradient from former unlined ponds 3E, 4E, 5E and 6E that underlie portions of RCRA Pond 15S and the Phase IV ponds. The area of highest impact to groundwater from these former ponds is observed in RCRA network wells 114, 115, 166, 168, and 131 and CERCLA network well 139. Some of these wells are located within the footprint of former ponds 3E and 5E or are immediately downgradient from these ponds collectively. These former ponds are also a source of potassium, selenium, sulfate, nitrate and total phosphorus / orthophosphate to groundwater beneath the Western Ponds Area (FMC, 2009b). Over the last ten years, increasing concentration trends have been apparent for sulfate and selenium (at well 168) and nitrate (at wells 115 and 166). Sulfate concentrations have also shown an increase at well 158, which functions as an upgradient well for WMU 7. Recently, however (within the last two to four years), the selenium and sulfate trends at well 168 and the nitrate trend at well 166 have stabilized, with concentrations still elevated above historic values but no longer steadily increasing.

The former ponds 3E, 4E, 5E and 6E were removed from service and dried in 1980 and 1981, and were partially excavated for the construction of the Phase IV ponds in 1981 and Pond 15S in 1982 (EMF RI Report [Bechtel, 1996], Appendix M). The RCRA closures of the Phase IV ponds and Pond 15S were completed in 2004. Portions of these former ponds were not covered by the Phase IV ponds and Pond 15S (Figure 2). The runoff from the RCRA covers at the Phase IV ponds and Pond 15S flows into the topographically lower areas to the south (portions of former ponds 4E and 6E), and to a lesser degree north (portions of former ponds 3E and 5E), which may be creating artificially high infiltration through these old ponds and additional mobilization of pond-related constituents through the vadose zone into groundwater. The additional mobilization of old pond-related constituents (e.g., common ions, nutrients, arsenic and selenium) could account for the variability and trends observed in the RCRA and CERCLA wells in this area and downgradient of the Western Ponds Area (FMC, 2009b). As described in Section 2, the CERCLA soil remedial action includes re-grading and capping the old pond areas adjacent to RCRA ponds, including Pond 8E and the Phase IV ponds. The grading was designed to integrate the RCRA caps and CERCLA soil remedial action caps to drain precipitation off the capped areas (i.e., eliminate drainage from the RCRA ponds from infiltrating in the old pond areas). The Site-Wide Grading phase was completed in 2015 and the CERCLA soil remedy caps are anticipated to be completed in 2016. Following completion of the CERCLA soil remedial action, groundwater quality in the Western Ponds Area is expected to gradually improve.

As described in greater detail in the Groundwater Current Conditions Report for the FMC Plant OU (FMC, 2009b), the highest concentrations of potassium, ammonia and total phosphorus / orthophosphate in groundwater at the FMC Plant Site are encountered in wells downgradient from former Pond 8S. Wells downgradient from former Pond 8S (WMU 7) continue to have elevated common ion and nutrient concentrations due to historic releases from this WMU. A key indicator of past releases from Pond 8S, potassium concentrations in downgradient wells for WMU 7 in 2015 averaged 730 mg/L, and ranged from 222 to 1,280 mg/L (17 to 100 times greater than the representative [background] concentration of about 12.7 mg/L). Closure of Pond 8S has removed the hydraulic head from this WMU and releases have ceased. Potassium concentrations in downgradient wells have shown

decreasing or stable trends over the last ten years, and arsenic concentrations also have continued to decrease as described in Section 4.2.

Wells downgradient from the Slag Pit Sump (WMU 5) continue to have elevated common ion and nutrient concentrations due to historic releases from this WMU, but at much lower levels than observed in the Western Ponds Area (FMC, 2009b). Potassium concentrations at Slag Pit Sump downgradient monitoring well 108/108A in 2015 (118 to 133 mg/L) were similar to but slightly higher than 2014 concentrations (104 to 119 mg/L), and a similar range of potassium concentrations was observed at Slag Pit Sump downgradient monitoring well 122 (106 to 134 mg/L). The 2015 potassium concentrations at well 108/108A remained well below the maximum historical potassium concentration of about 275 mg/L observed in 1999. An interim cover was placed on the Slag Pit Sump in November 1999, which effectively reduced the potential for infiltration and releases from WMU 5. Final closure of the slag pit sump was completed in October 2005.

Cadmium

Total cadmium was reported as <0.003 mg/L in 112 out of 148 RCRA well groundwater samples analyzed in 2015. Eleven cadmium results were reported at detected concentrations ranging from 0.003 to 0.0097 mg/L in 2015, from wells 114, 115, 123, 131 and 156. An additional twenty-five cadmium results were reported as J-qualified values (defined as estimated concentrations above the method detection limit but below the reporting limit), at concentrations ranging from 0.00028 to 0.0028 mg/L (Appendix B). As noted in previous RCRA monitoring assessments, the prevalence of non-detect and low J-qualified results for cadmium during 2015 and previous years continues to show that cadmium is not a site-related groundwater constituent. Unlike known site-related constituents in groundwater such as arsenic, cadmium is not consistently detected and the infrequent detected concentrations are within the range of background concentrations.

Elemental Phosphorus

Pursuant to EPA's publication of an elemental phosphorus analytical method (7580) in SW-846 and as requested by EPA, FMC began groundwater sampling and analysis for elemental phosphorus during a January 1998 special monitoring event. The January 1998 monitoring included analyses of groundwater samples from site-wide wells and Batiste and Swanson Road Springs for elemental phosphorus. The elemental phosphorus results for the wells in the Western Ponds Area (including Pond 8S) and all of the wells downgradient from Slag Pit Sump wells 108 and 122 including Batiste and Swanson Road Springs were undetected at a detection limit of 0.00005 mg/L (0.05 µg/L). Elemental phosphorus was detected only at Slag Pit Sump downgradient well 108 (well 122 was not sampled / analyzed during the January 1998 event). Elemental phosphorus was detected in well 122 during monitoring subsequent to January 1998.

Based on the January 1998 CERCLA special monitoring program, EPA and FMC agreed that the RCRA groundwater monitoring program would include semiannual monitoring for elemental phosphorus at the Slag Pit Sump and Pond 8S wells. Results since 1998 have shown that elemental phosphorus is routinely detected at wells 108/108A and 122, and infrequently detected at Pond 8S and other Slag Pit Sump wells. In addition, FMC conducted an expanded CERCLA groundwater monitoring program during May 2008 that included sampling and analysis of wells downgradient from the Slag Pit Sump for elemental phosphorus. The elemental phosphorus results for all of the wells downgradient from wells 108 and 122 including Batiste Spring were undetected in May 2008 at a detection limit of 0.00005 mg/L (0.05 µg/L).

Groundwater elemental phosphorus results for 2015 are presented in Appendix B, and are summarized in the following table:

Well	2Q15 Elemental P Result (mg/L)	4Q15 Elemental P Result (mg/L)
108A	0.000021 (J)	0.00035
121A	<0.00005 [<0.00005]	0.000016 (J)
122	0.00058	0.00065
123	<0.00005	0.000016 (J)
155	<0.00005	<0.00005
156	<0.00005 [<0.00005]	<0.00005 [<0.00005]
157	<0.00005	<0.00005
158	<0.00005	<0.00005
183	<0.00005	<0.00005
Rinsate	<0.00005 (5/7/2015)	<0.00005
Blank	<0.00005 (6/26/2015)	

Values in square brackets [] are field duplicate sample results.

(J) = Laboratory qualifier indicating analyte value less than the reporting limit but greater than the method detection limit.

Time series plots for elemental phosphorus at wells 108/108A and 122 are shown on Figures 15 and 16, respectively. Elemental phosphorus concentrations at well 108/108A have been highly variable, ranging from 0.000021 mg/L (June 2015) to 0.258 mg/L (November 2003) over the period of record (Figure 15). The well 108A elemental phosphorus results for June 2015 (0.000021 mg/L) and November 2015 (0.00035 mg/L) are substantially lower than the results observed over the last ten years at well 108 (which was replaced by well 108A in 2015). From 2005 through 2014, elemental phosphorus results at well 108 ranged from 0.028 to 0.179 mg/L, with an average over that period of 0.084 mg/L.

Elemental phosphorus concentrations at well 122 have ranged from 0.00019 mg/L (November 2004) to 0.00719 mg/L (November 2003), and have not shown a long-term trend over the monitoring period. Other than anomalously elevated concentrations near 0.007 mg/L in 2003, elemental phosphorus concentrations at well 122 have largely remained within a fairly narrow concentration range from about 0.001 to 0.003 mg/L (Figure 16). The 2015 results of 0.00058 mg/L in May 2015 and 0.00065 mg/L in November 2015 were lower than

previously observed values, with the exception of the minimum value of 0.00019 mg/L from November 2004.

As described in greater detail in the Groundwater Current Conditions Report for the FMC Plant OU (FMC, 2009b), elemental phosphorus has been sporadically reported as detected near the detection limit at Pond 8S wells 158 and 183 (upgradient) and 155, 156 and 157 (downgradient), as well as Slag Pit Sump upgradient well 121 and downgradient well 123, and in rinsate blanks. The elemental phosphorus analytical method (EPA method 7580) has an extremely low detection limit and FMC's current laboratory typically achieves a detection limit of 0.05 µg/L. A data review has shown that, over the period of routine monitoring for elemental phosphorus (1998-2015), frequencies of reported detections have been similar for the rinsate blank samples compared to downgradient Pond 8S wells 155, 156 and 157 and upgradient well 158 and Slag Pit Sump wells 121 and 123 (FMC, 2009a). Thus, some percentage of the sporadically reported detected results for these wells at very low concentrations may be laboratory artifacts.

Monitoring results tabulated above show that low J-qualified concentrations of elemental phosphorus (0.000016 mg/L) were reported at wells 121A (which replaced well 121 in 2015) and well 123 in 2015. Concentrations were reported below the detection limit (<0.00005) at all other wells sampled, including Pond 8S upgradient wells 158 and 183, and downgradient wells 155, 156 and 157 during the May and November 2015 monitoring events. Elemental phosphorus rinsate blank results for 2015 monitoring were also all reported at <0.00005 mg/L. None of the historic results for the Pond 8S wells and Slag Pit Sump wells 121 and 123, including the 2015 results, have exceeded the EPA Preliminary Remediation Goal (PRG) of 0.73 µg/L (0.00073 mg/L) for elemental phosphorus in tap water.

4.2 STATISTICAL ANALYSES

Based on the EPA "Proposed Groundwater Monitoring Reductions for the FMC Pocatello Facility" letter dated June 13, 1995 (Appendix C), FMC revised its RCRA groundwater monitoring to a reduced list of monitoring parameters, including arsenic, fluoride and selenium as indicator constituents for statistical analyses. As recommended by the EPA

(James Brown, Office of Solid Waste, May 5, 1993), and consistent with the EPA's guidance documents for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (EPA, 1989, 1992, 2009), 2015 indicator constituent concentrations were analyzed as in previous years, using an established set of statistical procedures: the non-parametric Mann-Whitney U-test (rank-sum test) to compare the central tendency (median) of two data sets, and a comparison of mean concentrations. Details of the Mann-Whitney method are provided in the "RCRA Interim Status Groundwater Monitoring Assessment Report" (FMC, 1993). Statistical testing procedures are as follows:

Test 1) For each WMU, the arsenic, fluoride, and selenium concentrations in upgradient wells were compared to those in the downgradient wells using the Mann-Whitney U-test. The test was performed using a significance level $\alpha = 0.05$ (i.e., if the test yielded a p-value less than 0.05, the null hypothesis was rejected and the median concentrations of upgradient and downgradient wells were considered to be significantly different). The α -value of 0.05 sets the Type I error rate at 5%; that is, the risk that the medians will be considered significantly different through statistical testing, even though they are not is 5%. This is typically an acceptable rate as described in guidance and other sources (Gilbert, 1987 and EPA, 1989 and 2009). The software package used was STATISTICA data analysis software system, Version 6.1, (www.statsoft.com). In many cases, constituent concentrations were expected to be higher in the downgradient wells because of the presence of former unlined ponds underlying or adjacent to certain WMUs (Figure 2). These former ponds ceased operation before applicable RCRA permit requirements came into effect. As discussed in previous annual assessment reports (FMC, 1993; February 1994 through February 2014), results showing statistically higher downgradient concentrations using this analysis do not necessarily indicate current impacts from the WMUs, and in certain cases may instead be attributable to prior practices at the former ponds. Consequently, an additional test (Test 2) was also conducted for downgradient wells for each WMU.

Test 2) For each downgradient well, the 2015 mean concentrations of arsenic, fluoride, and selenium were compared to pre-2015 mean concentrations. Test 2 statistical

analysis was performed using Excel software from Microsoft. If 2015 mean concentrations were less than or equal to pre-2015 mean concentrations, it was concluded that concentrations of the measured constituent are not increasing at that well, therefore presumably no leakage of contaminants from the WMU is occurring. If the results of Test 1 indicated that concentrations in downgradient wells were significantly higher than those of upgradient wells, and the results of Test 2 indicated that the 2015 mean was higher than the pre-2015 mean for any individual downgradient well, then Test 3 was conducted.

Test 3) The Mann-Whitney U-test was performed for downgradient wells in the given WMU to compare concentrations observed in 2015 with concentrations observed in previous years (pre-2015). This test is intended to determine if data for a constituent shows a statistically significant increase through time by comparing the median concentrations of the 2015 and pre-2015 data sets. As with Test 1, Test 3 was performed using a significance level $\alpha = 0.05$.

It should be noted that, for purposes of the three statistical tests described above, data reported as less than the analytical detection limit were removed from the database prior to performing statistical testing on the data set.

In addition to the statistical analyses, time-series plots showing indicator constituent concentrations for each WMU were prepared. As described in Section 2, wells 175 and 176 are not included in the Pond 18 Cell A post-closure groundwater monitoring and the prior data from these wells were not used in the statistical analysis or plotted on the time series plots for Pond 18 Cell A. The time series plots and the statistical test results are presented in Appendix A for each WMU. A summary of the results of the statistical tests is provided in Table 3.

As initially noted in the 2013 RCRA report (FMC, 2012), anomalous indicator constituent values are occasionally reported by the analytical laboratory, due to matrix interference or other analytical issues. Although all data collected as part of the RCRA groundwater monitoring program is subjected to a formal data verification and validation process, in some

instances the data review does not discover information sufficient to reject or otherwise disqualify the anomalous data points from use in statistical testing. The nonparametric nature of statistical Tests 1 and 3 described above (Mann-Whitney U-tests comparing medians of two data sets) provides some resistance to statistical outliers, although Test 2 (based on a simple comparison of mean concentrations) could be skewed by abnormally high or low values. In general, results of statistical tests and/or trend assessments for well data sets including highly anomalous data points, where the anomalous data points differ by an order of magnitude or more from other data collected during prior and subsequent monitoring events, should be interpreted with appropriate caution. Review and interpretation of statistical test results should also always be complemented by review and interpretation of temporal trend plots.

The results of Test 1 (Table 3; Appendix A) show median arsenic concentrations being higher in downgradient wells for all the WMUs evaluated except Pond 9E (WMU 9). Based on Test 1, fluoride concentrations are higher in the downgradient wells at two of the nine WMUs evaluated: Pond 15S (WMU 3) and Phase IV Ponds/Pond 8E (WMU 8/11). The Test 1 fluoride results for WMUs 3 and 8/11 are presumed to be primarily due to the presence of site-related constituents derived from former unlined ponds that are beneath or adjacent to the subject interim status surface impoundments. Finally, Test 1 results for selenium show that WMU 5, WMU 8/11, WMU 9 and WMU 10 showed median selenium concentrations were higher in downgradient wells than upgradient wells. The results of the Test 1 statistical analyses for 2015 are identical to 2014 results, and generally consistent with results from previous monitoring years.

As shown in Table 3, for some of the downgradient wells the Test 2 statistical analysis indicates higher mean arsenic, fluoride, and/or selenium concentrations for 2015 compared with pre-2015 concentrations. For those WMUs and parameters where Test 1 indicated significantly higher concentrations in downgradient wells compared with upgradient wells, and Test 2 showed higher mean concentrations (for any individual downgradient wells) in 2015 relative to the pre-2015 data set, further analysis was conducted as described above (Test 3). Test 3 was conducted on the arsenic data for WMU 3, fluoride data for WMUs 3

and 8/11, and selenium data for WMUs 5, 8/11 and 9. The combined results of statistical testing (Table 3) show that, based on the statistical testing procedures, there is no evidence that indicator parameter concentrations are currently increasing over time in downgradient wells at any of the WMUs. Statistical results are described in greater detail in the following subsections for each WMU.

WMU #3 (Pond 15S)

The results of Test 1 indicated that concentrations of arsenic and fluoride in downgradient wells were greater than those in upgradient wells, but selenium concentrations were not. The results of Test 2 indicated that 2015 mean concentrations exceeded pre-2015 mean concentrations for both arsenic and fluoride in well 115, and for selenium in well 166.

Selenium passed Test 1, so Test 3 was performed only for arsenic and fluoride. The results of Test 3 for arsenic and fluoride suggest that downgradient concentrations are not increasing over time. Therefore, the combined results of the statistical analyses do not provide evidence that impacts to groundwater are presently occurring at WMU 3. Time-series plots of arsenic, fluoride, and selenium concentrations at WMU 3 wells (Appendix A) indicate that concentrations are seasonally variable, particularly for fluoride, but are currently stable or decreasing.

WMU #5 (Slag Pit Sump)

The results of Test 1 indicated that concentrations of arsenic and selenium in downgradient wells were significantly higher than concentrations in upgradient wells. Concentrations of fluoride were not determined to be higher in downgradient wells based on Test 1.

The results of Test 2 indicate that pre-2015 mean concentrations were exceeded by 2015 mean concentrations in the following wells:

- Well 108/108A – selenium;
- Well 122 – selenium; and
- Well 123 – fluoride.

Fluoride passed Test 1, and arsenic passed Test 2, so Test 3 was not performed on arsenic or fluoride. Test 3 was performed for selenium, and results indicated that concentrations are not increasing over time. Therefore, the combined results of the statistical analyses do not provide evidence that impacts to groundwater are presently occurring at WMU 5. Evaluation of the time-concentration plots in Appendix A for WMU 5 confirms that, in recent years, concentrations of arsenic, fluoride and selenium have shown decreasing or stable trends in groundwater. Downgradient well 123, which has historically shown the highest concentrations of arsenic and selenium in any of the downgradient wells at WMU 5, showed stable selenium concentrations and slightly decreasing arsenic concentrations in 2015 (Appendix A). Arsenic and selenium concentrations at well 123 since 2013 have been similar to values observed from 2008-2011, suggesting that some of the lower concentrations observed in 2012 and shown on the Appendix A trend plots may have been biased low.

Releases have occurred from the unit in the past due to the presence of wastewater in the unlined sump (as documented in previous annual assessment reports); however, the hydraulic head at this unit has been removed. The removal of the hydraulic head, combined with the above analysis suggests that the unit is not currently leaking. Since the slag pit sump has leaked in the past, the rate and extent of constituent migration in the aquifer must be monitored. Due to commingling of constituents from other, non-RCRA regulated sources, it is difficult to define the extent of constituents attributable to the slag pit sump. However, the facility-wide extent of these constituents was presented in the text and figures of Section 4.4 of the EMF Remedial Investigation Report (Bechtel, August 1996) and updated in the Groundwater Current Conditions Report for the FMC Plant OU (FMC, 2009b). The overall groundwater flow pattern observed at the facility in 2015 (direction and rate of movement) supports the Remedial Investigation and Groundwater Current Conditions Report findings describing the extent of various constituents associated with the slag pit sump.

The rate of migration of slag pit sump constituents was estimated using the calculated groundwater flow velocity as the “worst-case” or highest rate of migration. Using K (hydraulic conductivity) of 286 ft/day (as measured in Well 108), i (gradient) of 0.008, and

n (porosity) of 0.20, the groundwater flow velocity is 11 feet per day. Typically, solutes in the groundwater migrate at a slightly slower rate than the groundwater flow velocity due to attenuation effects such as adsorption, precipitation/dissolution reactions and ion exchange.

WMU #7 (Pond 8S)

The results of Test 1 indicated that concentrations of arsenic in downgradient wells were greater than concentrations in upgradient wells. Concentrations of fluoride and selenium were not determined to be higher in downgradient wells based on Test 1. The results of Test 2 indicated that the pre-2015 mean fluoride concentration was exceeded by the 2015 mean fluoride concentration for well 156.

Because fluoride and selenium passed Test 1, and arsenic passed Test 2, Test 3 was not performed for any of the indicator parameters. Thus, the combined results of the statistical analyses do not provide evidence that impacts to groundwater are presently occurring at WMU 7.

The statistical results are consistent with the prediction that, after dewatering and capping of Pond 8S, leakage of pond solute has been substantially decreased and will eventually be eliminated. Consequently, pond-related constituent concentrations in groundwater downgradient from Pond 8S are expected to gradually decrease over many years. The time-series graphs for WMU 7 in Appendix A show decreasing long-term trends at a number of wells, particularly arsenic in all downgradient wells, and fluoride at downgradient Well 157. Fluoride concentrations at well 157 have been below 1 mg/L since 2004, with seasonal variability apparent. In general, indicator parameter concentrations in 2015 remained consistent with values observed over the last several years at all three downgradient wells (155, 156 and 157). A slightly elevated arsenic concentration was reported at well 156 during the last quarter of 2014 (0.20 mg/L). Arsenic concentrations at this well in 2015 were all lower than 0.20 mg/L, ranging from 0.14 to 0.16 mg/L, consistent with the narrow range of observed arsenic concentrations at this well since 2000 of about 0.10 to 0.18 mg/L.

Since Pond 8S has shown evidence of leakage in the past, the rate and extent of constituent migration in the aquifer must be monitored. As with the slag pit sump, commingling of constituents from other, non-RCRA regulated sources has occurred. The overall consistency of the groundwater flow patterns supports the use of the figures and discussion presented in Section 4.4 of the EMF Remedial Investigation Report (Bechtel, August 1996) and as updated in the Groundwater Current Conditions Report for the FMC Plant OU (FMC, 2009b) to describe the extent of migration.

The rate of migration of Pond 8S constituents was estimated using the calculated groundwater flow velocity as the “worst-case” or highest rate of migration. Using K (hydraulic conductivity) of 1000 ft/day (as measured in Well 150), i (gradient) of 0.010, and n (porosity) of 0.20, the groundwater flow velocity is 50 feet per day. As with the slag pit sump area, this is the groundwater flow rate; the actual constituent migration rate may be less because of attenuation.

WMUs #8 and #11 (Phase IV Ponds and Pond 8E)

The results of Test 1 indicated that concentrations of arsenic, fluoride and selenium in downgradient wells were greater than concentrations in upgradient wells. The results of Test 2 indicated that 2015 mean concentrations exceeded pre-2015 mean concentrations in the following downgradient monitoring wells:

- Well 114 – fluoride; and
- Well 168 – selenium.

Arsenic passed Test 2, so Test 3 was performed for fluoride and selenium only. Test 3 results indicated that the 2015 median fluoride and selenium concentrations for downgradient wells were not significantly greater than pre-2015 median concentrations (Table 3).

Concentrations of indicator parameters for downgradient wells at WMUs 8 and 11 show stable or decreasing trends for the majority of wells (Appendix A). However, as noted in previous RCRA Groundwater Monitoring Assessments, selenium concentrations at

downgradient well 168 have shown an overall increasing trend since 2006, from a typical concentration of about 0.015 mg/L prior to 2006, to a range of 0.0640 to 0.0760 mg/L in 2015 (Appendix B). The increasing trend in selenium concentration at well 168 appears to have ceased, at least for the last several years, with concentrations showing seasonal variability but no indications of an overall increase since 2012. The highest selenium concentration observed at well 168 in 2015 (0.076 mg/L) was lower than the peak concentrations observed in 2013 (0.085 mg/L) and 2014 (0.084 mg/L). Neither of the other indicator parameters (arsenic or fluoride) has shown increases concurrent with the selenium increase at Well 168. As described above in Section 4.1, well 168 is located within the footprint of former pond 3E and this former unlined pond is an identified source of potassium, selenium, sulfate, nitrate and total phosphorus / orthophosphate to groundwater beneath the Western Ponds Area. The runoff from the RCRA covers at the Phase IV ponds into the topographically lower areas to the north and south onto portions of former pond 3E may be creating artificially high infiltration through this and other old ponds and additional mobilization of pond-related constituents through the vadose zone into groundwater. The additional mobilization of old pond-related constituents (e.g., common ions, nutrients, arsenic and selenium) would account for the variability and trends observed in well 168. As described in Section 4.1, following completion of the CERCLA soil remedial action, groundwater quality in the Western Ponds Area, including in the WMUs #8 and #11 downgradient wells, is expected to gradually improve.

WMU #9 (Pond 9E)

The results of Test 1 indicated that concentrations of selenium in downgradient wells were significantly greater than those in upgradient wells, while arsenic and fluoride were not (Table 3). The results of Test 2 indicated the pre-2015 mean concentrations were exceeded by 2015 mean concentrations for the following downgradient monitoring wells:

- Well 127 – fluoride and selenium; and
- Well 128 – fluoride.

Arsenic and fluoride passed Test 1, therefore, Test 3 was conducted for selenium only. Since selenium passed Test 3, the combined results of the statistical analyses do not provide evidence that impacts to groundwater are presently occurring at WMU 9.

Time-series plots of arsenic, fluoride and selenium concentrations in WMU 9 wells show that trends have been stable over time, fluctuating within a relatively narrow range. As in past years, both upgradient and downgradient wells showed seasonal variations in fluoride concentration during 2015 (Appendix A).

WMU #10 (Pond 16S)

The results of Test 1 indicated that concentrations of arsenic and selenium in downgradient wells were significantly greater than those in upgradient wells, but downgradient fluoride concentrations were not greater than upgradient concentrations. The results of Test 2 indicated pre-2015 mean concentrations were not exceeded by 2015 mean concentrations for any indicator parameters in the downgradient wells.

Because fluoride passed Test 1, and arsenic and selenium passed Test 2, Test 3 was not performed for any of the indicator parameters. The combined results of the statistical analyses do not provide evidence that impacts to groundwater are presently occurring at WMU 10. In addition, the parameter trend plots in Appendix A do not show any apparent long-term patterns for any of the indicator constituents, with the possible exception of a mild decreasing arsenic trend at downgradient well 149.

WMU #14 (Pond 17)

The results of Test 1 indicate that concentrations of arsenic in downgradient wells were greater than concentrations in upgradient wells, but fluoride and selenium concentrations were not. The results of Test 2 indicated the pre-2015 mean fluoride concentrations were exceeded by 2015 mean fluoride concentrations in downgradient wells 172 and 180.

Fluoride and selenium passed Test 1, and arsenic passed Test 2, so Test 3 was not conducted for any of the indicator parameters. Therefore, the combined results of the statistical analyses do not suggest impacts to groundwater are presently occurring at WMU 14.

Concentrations of arsenic and fluoride at downgradient WMU 14 wells have remained relatively stable throughout the period of record (Appendix A). Selenium concentrations have been slightly lower and more stable (less seasonally variable) over the last four years (2012-2015) than during the pre-2012 period, based on the trend plots in Appendix A.

WMU #15 (Pond 18 Cell A)

The results of Test 1 indicate that concentrations of arsenic in downgradient wells were greater than concentrations in upgradient wells. Fluoride and selenium concentrations were not significantly greater in downgradient wells. The results of Test 2 indicated the pre-2015 mean concentrations were exceeded by 2015 mean concentrations for fluoride at downgradient wells 154 and 177.

Fluoride and selenium passed Test 1, and arsenic passed Test 2, so Test 3 was not conducted for any of the indicator parameters. Therefore, the combined results of the statistical analyses do not suggest impacts to groundwater are presently occurring at WMU 15. The WMU 15 trend plots in Appendix A indicate that indicator parameter concentrations are seasonally variable, but have shown no discernable long-term trends through 2015. Similar to the downgradient WMU 14 wells, the downgradient WMU 15 well trend plots appear to show less seasonal variability in selenium concentrations after 2012, compared with the period prior to 2012.

5. REFERENCES

- ASTARIS Idaho LLC (FMC), February 2001, RCRA Interim Status 2000 Groundwater Monitoring Assessment.
- ASTARIS Idaho LLC (FMC), February 2002, RCRA Interim Status 2001 Groundwater Monitoring Assessment.
- Bechtel Environmental Inc. (BEI), April 1993, 8S Closure Plan, revised December 1993 and November 1994.
- Bechtel Environmental Inc. (BEI), August 1996, Remedial Investigation Report for the Eastern Michaud Flats Site.
- Bechtel Environmental Inc. (BEI), August 1999, RCRA Interim Status Groundwater Monitoring Plan.
- Environmental Protection Agency (EPA), April 1989, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities; Interim Final Guidance: Office of Solid Waste.
- EPA, June 1992, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities; Draft Addendum to Interim Final Guidance: Office of Solid Waste.
- EPA, March 2009, “Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance” EPA 530-R-09-007, Office of Resource Conservation and Recovery, Program Implementation and Information Division.
- EPA, 2012. Interim Amendment to the Record of Decision for the EMF Superfund Site – FMC Operable Unit – Pocatello, Idaho, September 27, 2012.
- EPA, 2013. Unilateral Administrative Order for Remedial Design and Remedial Action, EPA Docket No. CERCLA-10-2013-0116, June 10, 2013.
- FMC Corporation (FMC), August 1993, RCRA Interim Status Groundwater Monitoring Assessment.
- FMC Corporation (FMC), February 1994, RCRA Interim Status 1993 Groundwater Monitoring Assessment.
- FMC Corporation (FMC), February 1995, RCRA Interim Status 1994 Groundwater Monitoring Assessment.
- FMC Corporation (FMC), February 1996, RCRA Interim Status 1995 Groundwater Monitoring Assessment.

FMC Corporation (FMC), February 1997, RCRA Interim Status 1996 Groundwater Monitoring Assessment.

FMC Corporation (FMC), February 1998, RCRA Interim Status 1997 Groundwater Monitoring Assessment.

FMC Corporation (FMC), February 1999, RCRA Interim Status 1998 Groundwater Monitoring Assessment.

FMC Corporation (FMC), February 2000, RCRA Interim Status 1999 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2003, RCRA Interim Status 2002 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2004a, RCRA Interim Status 2003 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), August 2004b, Pond 18 Closure Plan.

FMC Idaho, LLC (FMC), February 2005, RCRA Interim Status 2004 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2006, RCRA Interim Status 2005 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2007, RCRA Interim Status 2006 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2008a, RCRA Interim Status 2007 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2008b, Calciner Pond Remedial Action Groundwater Monitoring Plan, Revised November 2008.

FMC Idaho, LLC (FMC), February 2009a, RCRA Interim Status 2008 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), 2009b, Groundwater Current Conditions Report for the FMC Plant Operable Unit, June 2009 Final.

FMC Idaho, LLC (FMC), February 2010a, RCRA Interim Status 2009 Groundwater Monitoring Assessment.

FMC Idaho, LLC (CMC), 2010b, Interim CERCLA Groundwater Monitoring Plan FMC Plant Operable Unit, July 2010.

FMC Idaho, LLC (FMC), February 2011, RCRA Interim Status 2010 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2012, RCRA Interim Status 2011 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2013, RCRA Interim Status 2012 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2014, RCRA Interim Status 2013 Groundwater Monitoring Assessment.

FMC Idaho, LLC (FMC), February 2015, RCRA Interim Status 2014 Groundwater Monitoring Assessment.

Gilbert, Richard O. (Gilbert), 1987, Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold, New York.

MWH, 2014. FMC OU – Soil Remedial Action – Engineering Design Submittal – Remedial Design Report, September 2014.

TABLES

**TABLE 1.
2015 WMU STATUS AND GROUNDWATER MONITORING NETWORK¹**

WMU NO.	WMU NAME	2015 MONITORING WELL NETWORK		OPERATIONAL STATUS
		UPGRADIENT	DOWNGRADIENT	
3	Pond 15S	165	113, 115, 166	RCRA closure completed November 2004 and certified January 2005.
5	Slag Pit Sump	121/121A	108/108A, 122, 123	RCRA closure completed October 2005 and certified December 2005.
7	Pond 8S	158, 183	155, 156, 157	RCRA closure completed October 1999 and certified December 1999.
8	Phase IV Ponds	167	104, 114, 131, 168	RCRA closure completed November 2004 and certified January 2005.
9	Pond 9E	124, 113	126, 127, 128	RCRA closure completed December 2000 and certified January 2001.
10	Pond 16S	154	147, 148, 149	RCRA closure completed November 2004 and certified January 2005.
11	Pond 8E	167	104, 114, 131, 168	RCRA closure completed November 2004 and certified January 2005.
14	Pond 17	173	171, 172, 180	RCRA closure completed November 2005 and certified December 2005.
15	Pond 18 Cell A	174	154, 177, 178	RCRA closure (Cell A closure in-place and Cell B closure by removal) completed November 2005 and certified December 2005 ² .

¹This table presents the current RCRA groundwater monitoring network as of fourth quarter 2015.

²Wells 175 and 176 were a part of the Pond 18 Cell A and Cell B network until closure was completed/certified. FMC continued to monitor these wells through 2008 and then discontinued monitoring beginning in 2009. Pond 18 Cell A groundwater monitoring continues pursuant to the Pond 18 Cell A Post Closure Plan.

**TABLE 2.
GROUNDWATER LEVELS - 2015**

Well	Groundwater Elevation in Feet Above Mean Sea Level			
Designation	February-15	May-15	August-15	November-15
RCRA Network Wells				
104	4396.27	4395.14	4395.19	4396.33
108	Extension in progress		Abandoned	
108A	Extension in progress			
113	4396.18	4394.58	4395.19	4396.40
114	Extension in progress			
115	Extension in progress			
121	Extension in progress		Abandoned	
121A	Extension in progress			
122	Extension in progress			
123	Extension in progress			
124	4396.28	4394.67	4395.38	4396.55
126	4395.96	4394.25	4395.07	4396.21
127	4395.92	4394.19	4395.00	4396.18
128	4395.94	4394.22	4394.99	4396.18
131	4395.87	4394.50	4394.84	4396.05
147	4396.58	4394.99	4395.71	4396.90
148	4396.47	4394.83	4395.58	4396.79
149	4396.48	4394.90	4395.57	4396.76
154	4396.89	4395.31	4396.03	4397.21
155	Extension in progress			
156	4396.00	4394.90	4395.02	4396.15
157	Extension in progress			
158	4396.79	4395.82	4395.80	4396.91
165	4396.36	4395.00	4395.31	4396.55
166	4395.93	4394.32	4394.91	4396.10
167	4397.42	4396.67	4396.19	4397.28
168	Extension in progress			
171	4396.45	4395.06	4395.50	4396.73
172	Extension in progress			
173	4397.23	4395.71	4396.30	4397.50
174	4397.46	4396.05	4396.61	4397.76
177	4397.18	4395.65	4396.35	4397.49
178	4397.10	4396.06	4396.08	4397.04
180	Extension in progress			
183	4397.14	4396.15	4396.12	4397.27

**TABLE 2.
GROUNDWATER LEVELS - 2015**

Well Designation	Groundwater Elevation in Feet Above Mean Sea Level			
	February-15	May-15	August-15	November-15
Calciner Pond Network Wells				
136	Extension in progress			
142	4416.71	4416.12	4415.72	4415.97
143	4392.55	4391.39	4391.32	4392.40
161	4556.47	4556.22	4555.74	4555.33
164	4424.06	4423.19	4421.88	4421.38
189	4391.70	4390.26	4390.00	4391.10
190	4393.25	4392.16	4391.81	4392.92
CERCLA Network Wells				
110	4384.16	4383.80	4383.96	4384.25
111	4392.22	4391.13	4391.49	4392.41
134	Extension in progress			
139	4395.68	4394.11	4394.64	4395.84
145	Extension in progress			
146	4389.36	4388.52	4388.78	4389.49
159	Extension in progress			
502	4384.11	4383.75	4383.90	4384.19
515	4392.79	4391.58	4392.12	4393.09
517	4383.95	4383.60	4383.76	4384.04
523	4395.81	4394.03	4394.74	4396.15
524	4382.54	4382.37	4382.42	4382.63
525	4382.58	4382.42	4382.48	4382.69
TW-11S	4383.67	4383.37	4383.50	4383.76
TW-12S	4383.89	4383.57	4383.71	4383.98
TW-9S	4385.25	4384.86	4385.02	4385.35
Other Site-Wide Wells				
101	4396.51	4395.20	4395.36	4396.56
102	4396.48	4395.16	4395.37	4396.60
103	4396.42	4395.32	4395.35	4396.52
106	4395.14	4394.00	4394.19	4395.32
107	Extension in progress			
109	4389.80	4388.75	4389.49	4390.05
112	4394.82	4393.39	4394.01	4395.10
116	Abandoned			
120	4395.85	4394.77	4394.91	4396.04
125	4395.94	4394.10	4394.98	4396.19
130	Abandoned			
133	Extension in progress			
135	Abandoned			
137	Abandoned			
140	Abandoned			

**TABLE 2.
GROUNDWATER LEVELS - 2015**

Well	Groundwater Elevation in Feet Above Mean Sea Level			
Designation	February-15	May-15	August-15	November-15
141	Extension in progress			
144	4391.33	4390.12	4390.23	4391.15
151	Extension in progress			
169	4397.54	4396.50	4396.28	4397.48
170	Abandoned			
175	4397.30	4395.86	4396.51	4397.61
176	4396.96	4395.43	4396.14	4397.27
179	Abandoned			
181	Abandoned			
182	Abandoned			
191	4418.40	4418.42	4418.21	4418.10
501	4394.14	4392.73	4393.29	4394.43
503	4383.44	4383.11	4383.25	4383.57
505	4383.78	4383.42	4383.60	4383.90
514	4394.97	4393.37	4394.08	4395.30
516	4384.78	4384.36	4384.54	4384.86
518	4383.73	4383.40	4383.54	4383.82
TW-5D	Abandoned			
TW-5I	Abandoned			
TW-5S	Abandoned			
Springs				
BATISTE SPRING	4381.90	4381.81	4381.96	4382.25
SPRING @ BATISTE RD	4381.74	4381.50	4381.73	4382.04

* Elevations are in Feet
Above Mean Sea Level

Extension in progress indicates no water level measurement recorded; temporary lack of access due to casing extension being installed as required by CERCLA remedial action activities.

**TABLE 3
SUMMARY OF STATISTICAL ANALYSES RESULTS - 2015**

WMU #	Downgradient Well #	Test 1 Are median concentrations in downgradient wells significantly greater than in upgradient wells?			Test 2 Is the 2015 mean higher than the Pre-2015 mean for individual downgradient wells?			Test 3 Are median concentrations in downgradient wells increasing?		
		Arsenic	Fluoride	Selenium	Arsenic	Fluoride	Selenium	Arsenic	Fluoride	Selenium
3	113	Y	Y	N	N	N	N	N	N	NA
	115				Y	Y	N			
	166				N	N	Y			
5	108/108A	Y	N	Y	N	N	Y	NA	NA	N
	122				N	N	Y			
	123				N	Y	N			
7	155	Y	N	N	N	N	N	NA	NA	NA
	156				N	Y	N			
	157				N	N	N			
8 and 11	104	Y	Y	Y	N	N	N	NA	N	N
	114				N	Y	N			
	131				N	N	N			
	168				N	N	Y			
9	126	N	N	Y	N	N	N	NA	NA	N
	127				N	Y	Y			
	128				N	Y	N			
10	147	Y	N	Y	N	N	N	NA	NA	NA
	148				N	N	N			
	149				N	N	N			
14	171	Y	N	N	N	N	N	NA	NA	NA
	172				N	Y	N			
	180				N	Y	N			
15	154	Y	N	N	N	Y	N	NA	NA	NA
	177				N	Y	N			
	178				N	N	N			

Y - Yes; N - No; U = Pre-2015 and/or 2015 mean not calculated due to non-detect result;
NA = not applicable (Test 3 not performed due to results of Test 1 and/or Test 2).

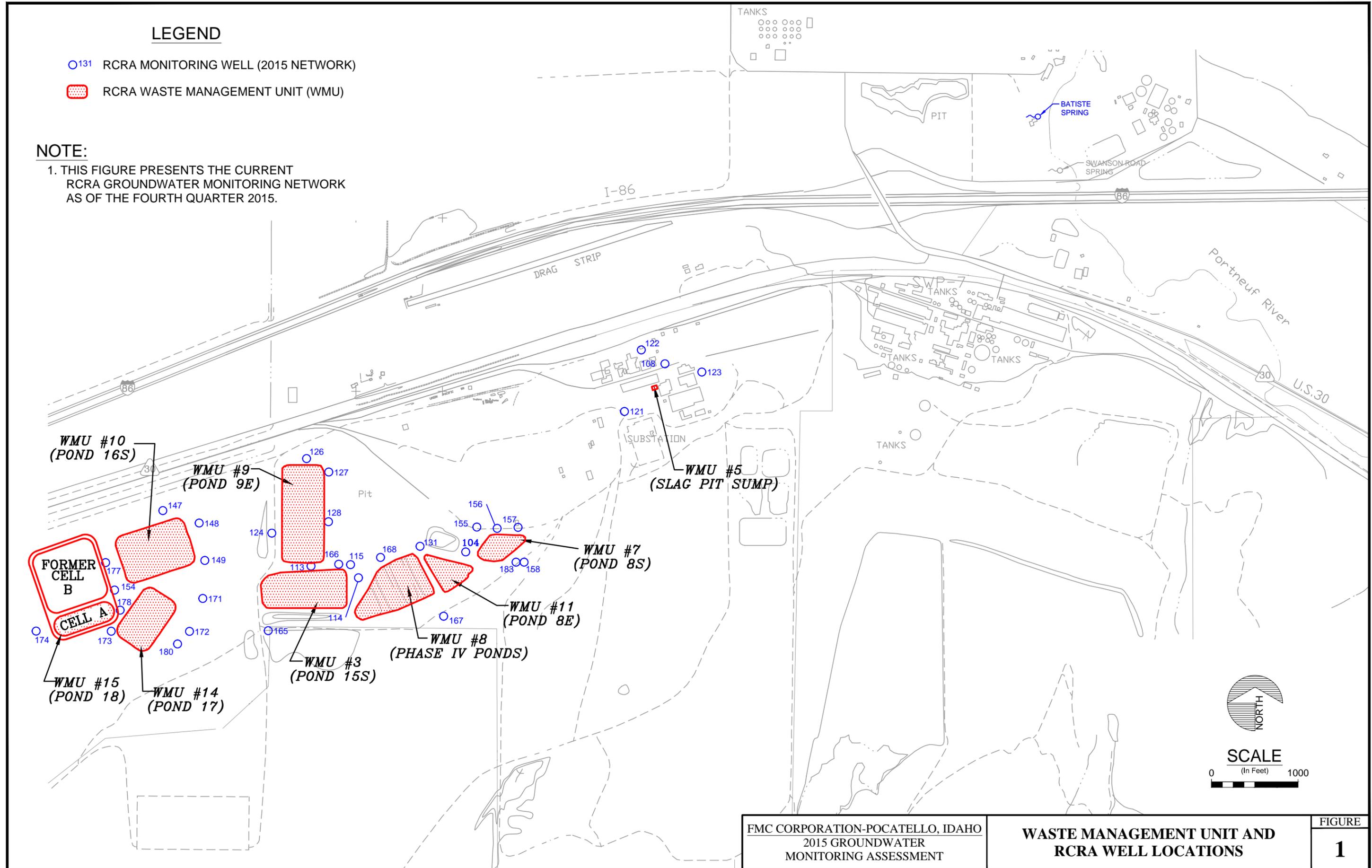
FIGURES

LEGEND

-  RCRA MONITORING WELL (2015 NETWORK)
-  RCRA WASTE MANAGEMENT UNIT (WMU)

NOTE:

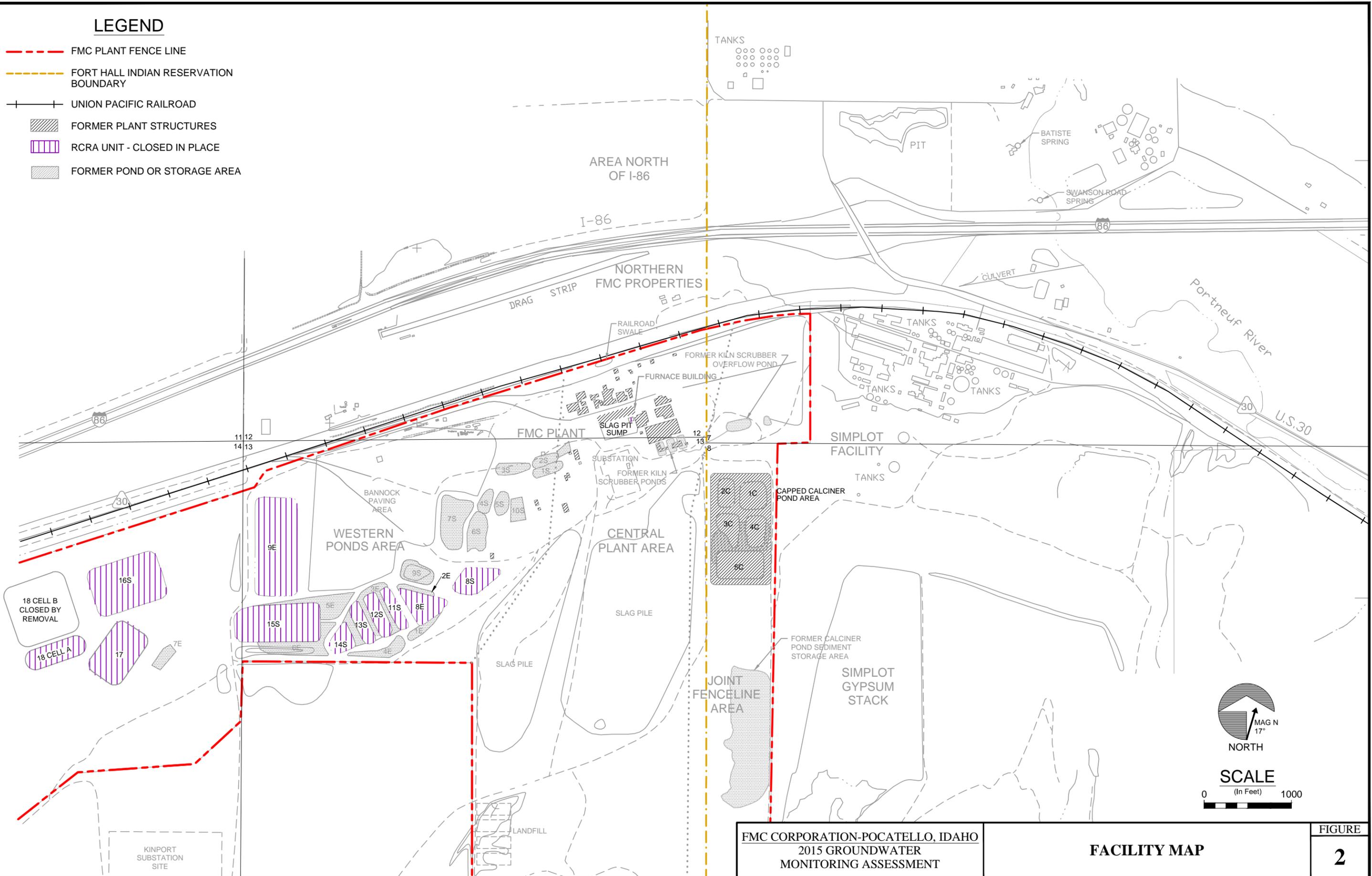
1. THIS FIGURE PRESENTS THE CURRENT RCRA GROUNDWATER MONITORING NETWORK AS OF THE FOURTH QUARTER 2015.



FMC CORPORATION-POCATELLO, IDAHO 2015 GROUNDWATER MONITORING ASSESSMENT	WASTE MANAGEMENT UNIT AND RCRA WELL LOCATIONS	FIGURE 1
---	---	--------------------

LEGEND

- - - FMC PLANT FENCE LINE
- - - FORT HALL INDIAN RESERVATION BOUNDARY
- UNION PACIFIC RAILROAD
- FORMER PLANT STRUCTURES
- RCRA UNIT - CLOSED IN PLACE
- FORMER POND OR STORAGE AREA



FMC CORPORATION-POCATELLO, IDAHO
2015 GROUNDWATER
MONITORING ASSESSMENT

FACILITY MAP

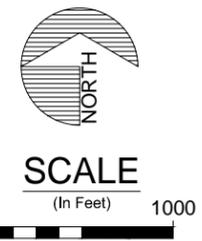
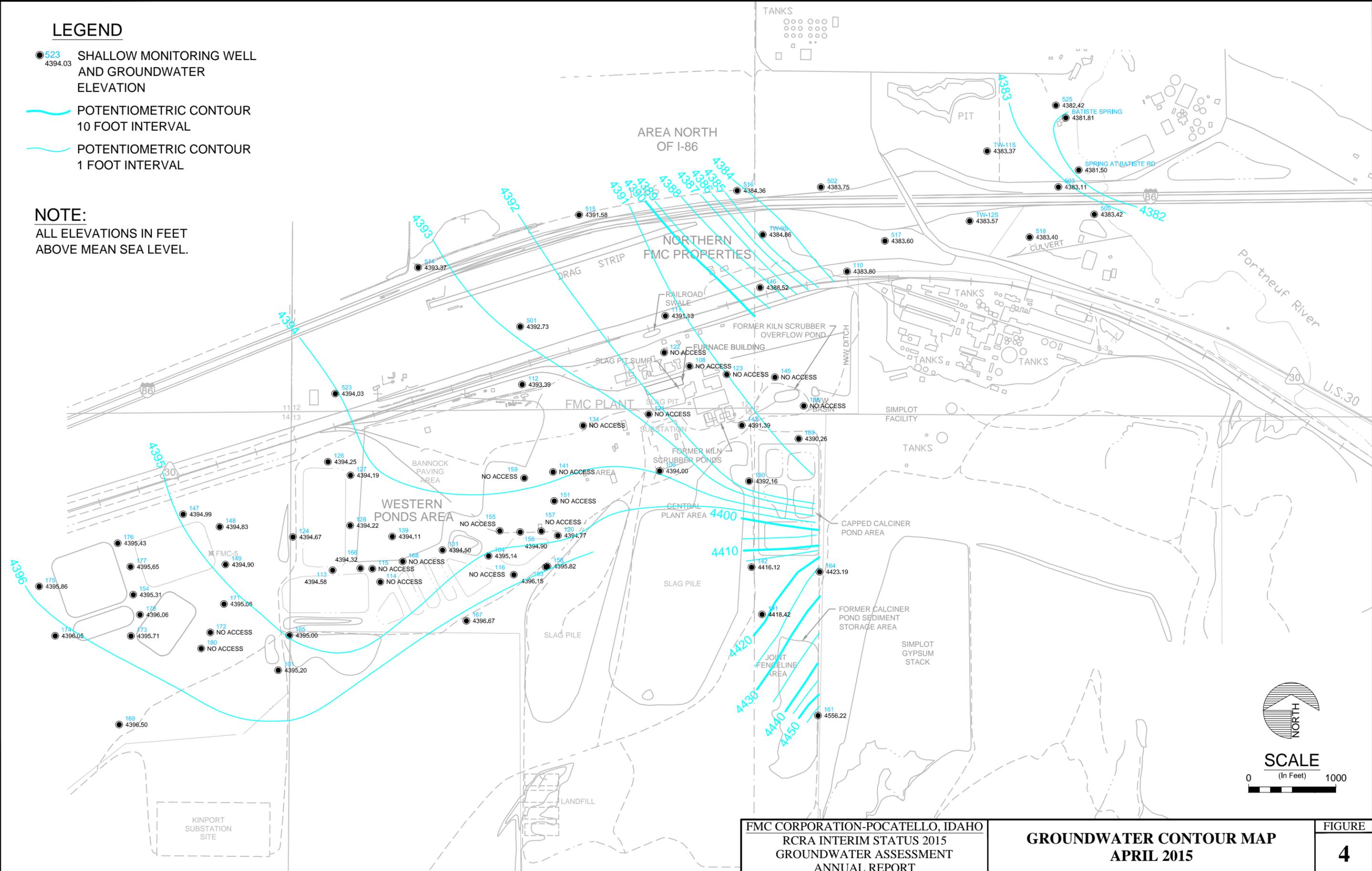
FIGURE

2

LEGEND

- 523 4394.03 SHALLOW MONITORING WELL AND GROUNDWATER ELEVATION
- POTENTIOMETRIC CONTOUR 10 FOOT INTERVAL
- POTENTIOMETRIC CONTOUR 1 FOOT INTERVAL

NOTE:
ALL ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.



FMC CORPORATION-POCATELLO, IDAHO
RCRA INTERIM STATUS 2015
GROUNDWATER ASSESSMENT
ANNUAL REPORT

GROUNDWATER CONTOUR MAP
APRIL 2015

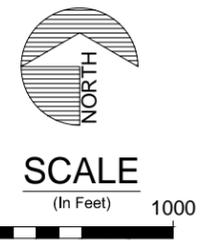
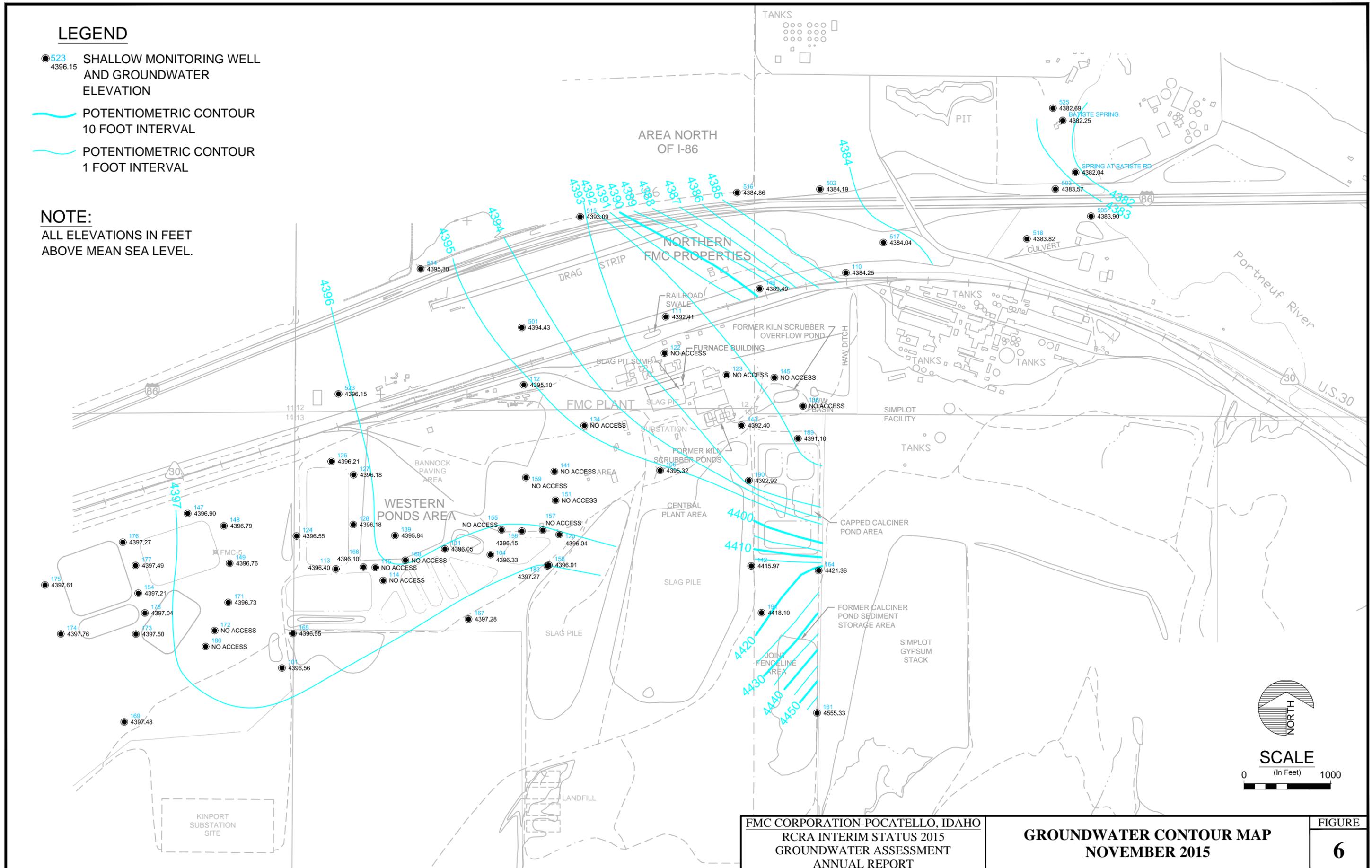
FIGURE
4

LEGEND

- 523 4396.15 SHALLOW MONITORING WELL AND GROUNDWATER ELEVATION
- POTENTIOMETRIC CONTOUR 10 FOOT INTERVAL
- POTENTIOMETRIC CONTOUR 1 FOOT INTERVAL

NOTE:

ALL ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.



FMC CORPORATION-POCATELLO, IDAHO
RCRA INTERIM STATUS 2015
GROUNDWATER ASSESSMENT
ANNUAL REPORT

**GROUNDWATER CONTOUR MAP
NOVEMBER 2015**

FIGURE
6

Figure 7. Hydrographs for Monitoring Wells for WMU #3 - Pond 15S

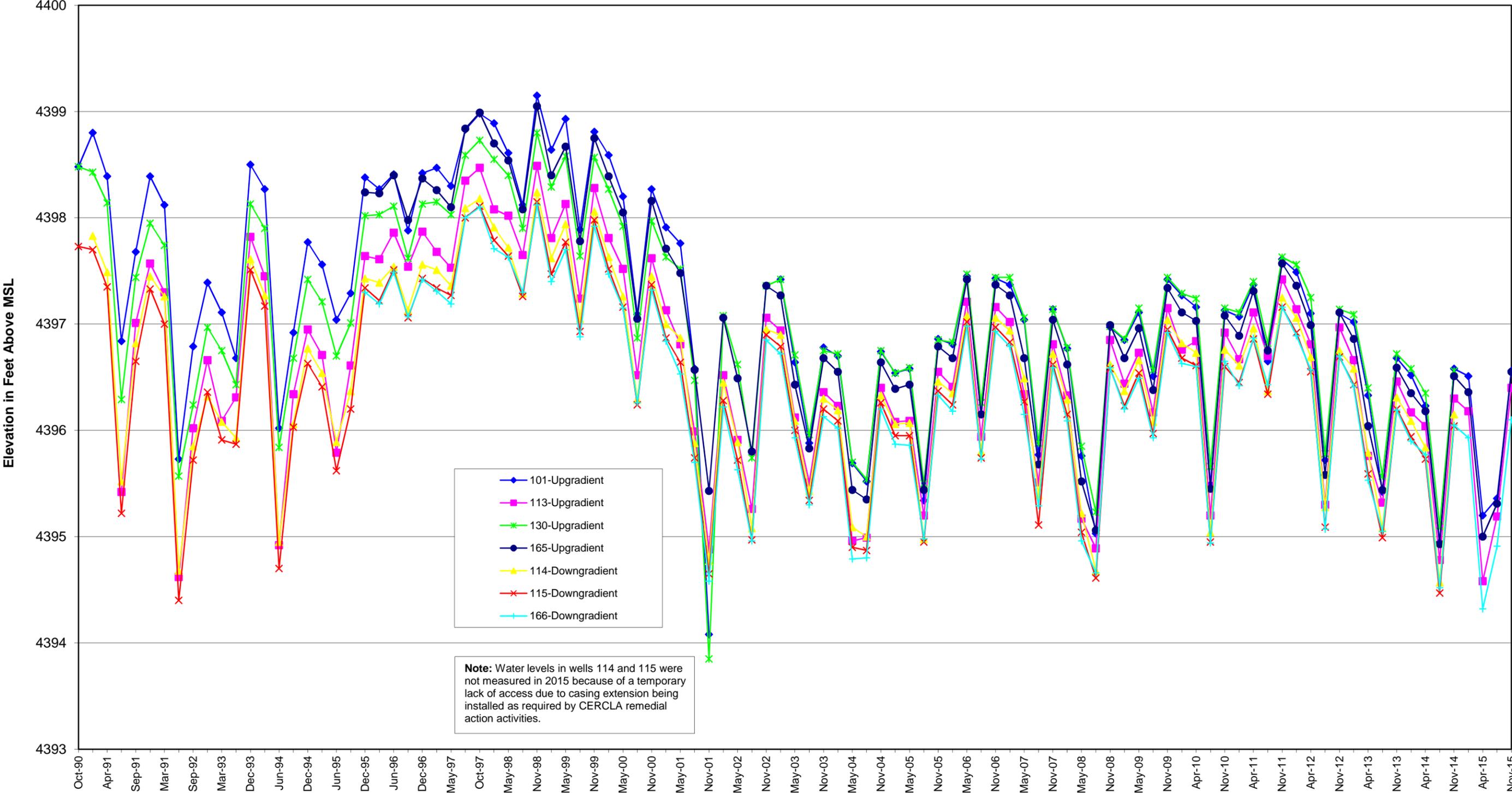


Figure 8. Hydrographs for Monitoring Wells for WMU #5 - Slag Pit Sump

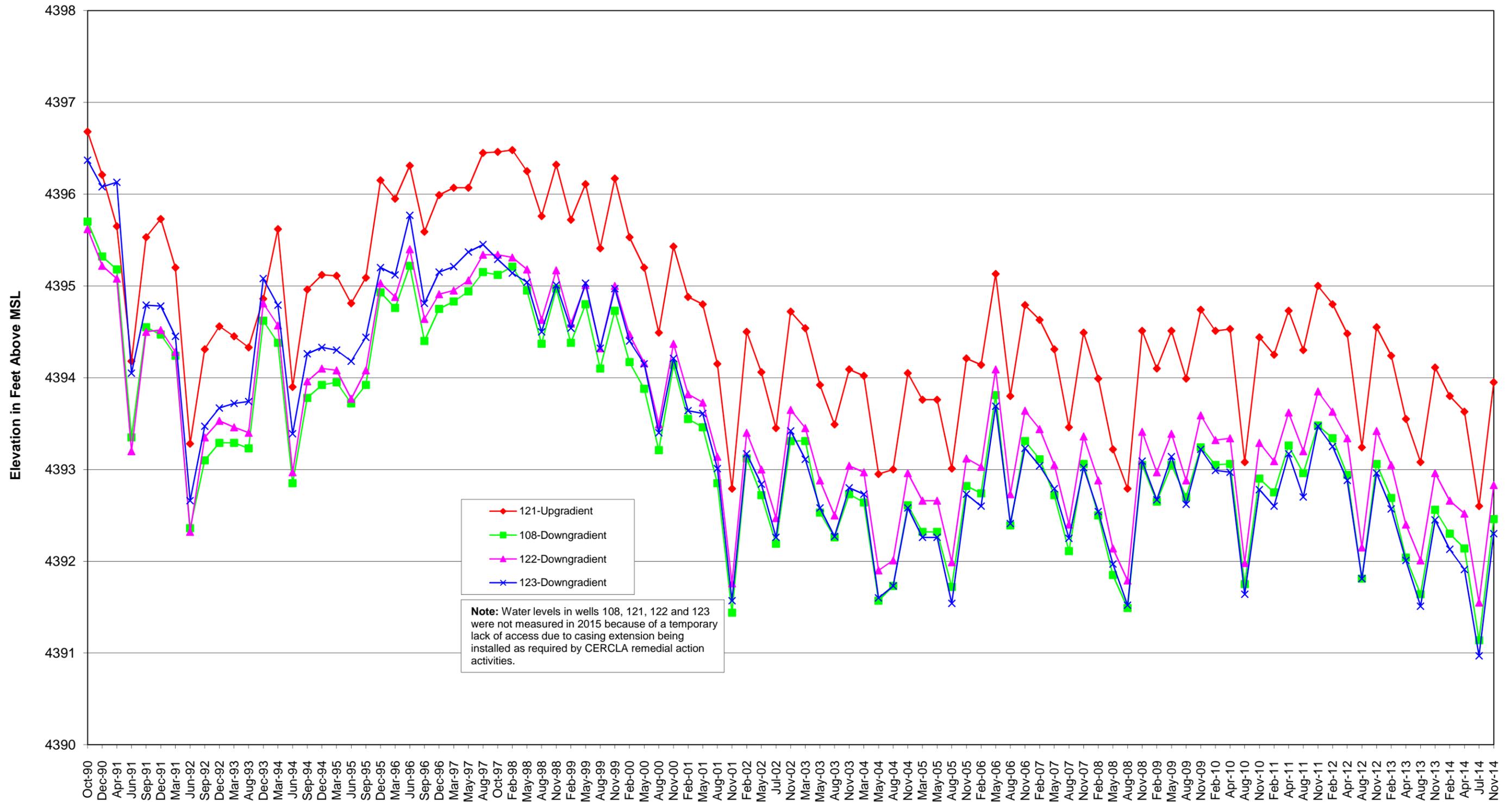


Figure 9. Hydrographs for Monitoring Wells for WMU #7 - Pond 8S

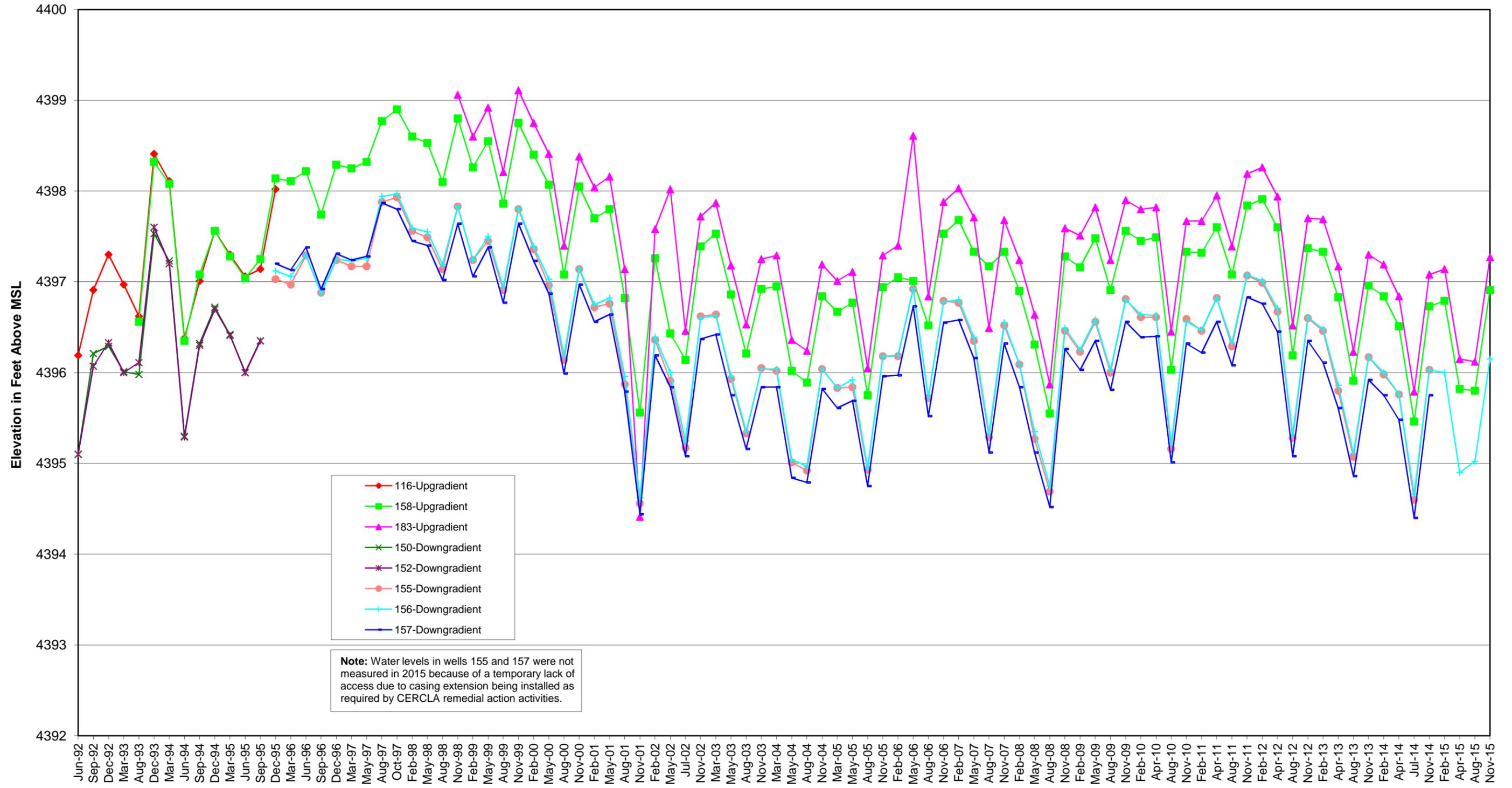


Figure 10. Hydrographs for Monitoring Wells for WMU #8 and #11 - Phase IV Ponds and Pond 8E



Figure 11. Hydrographs for Monitoring Wells for WMU #9 - Pond 9E

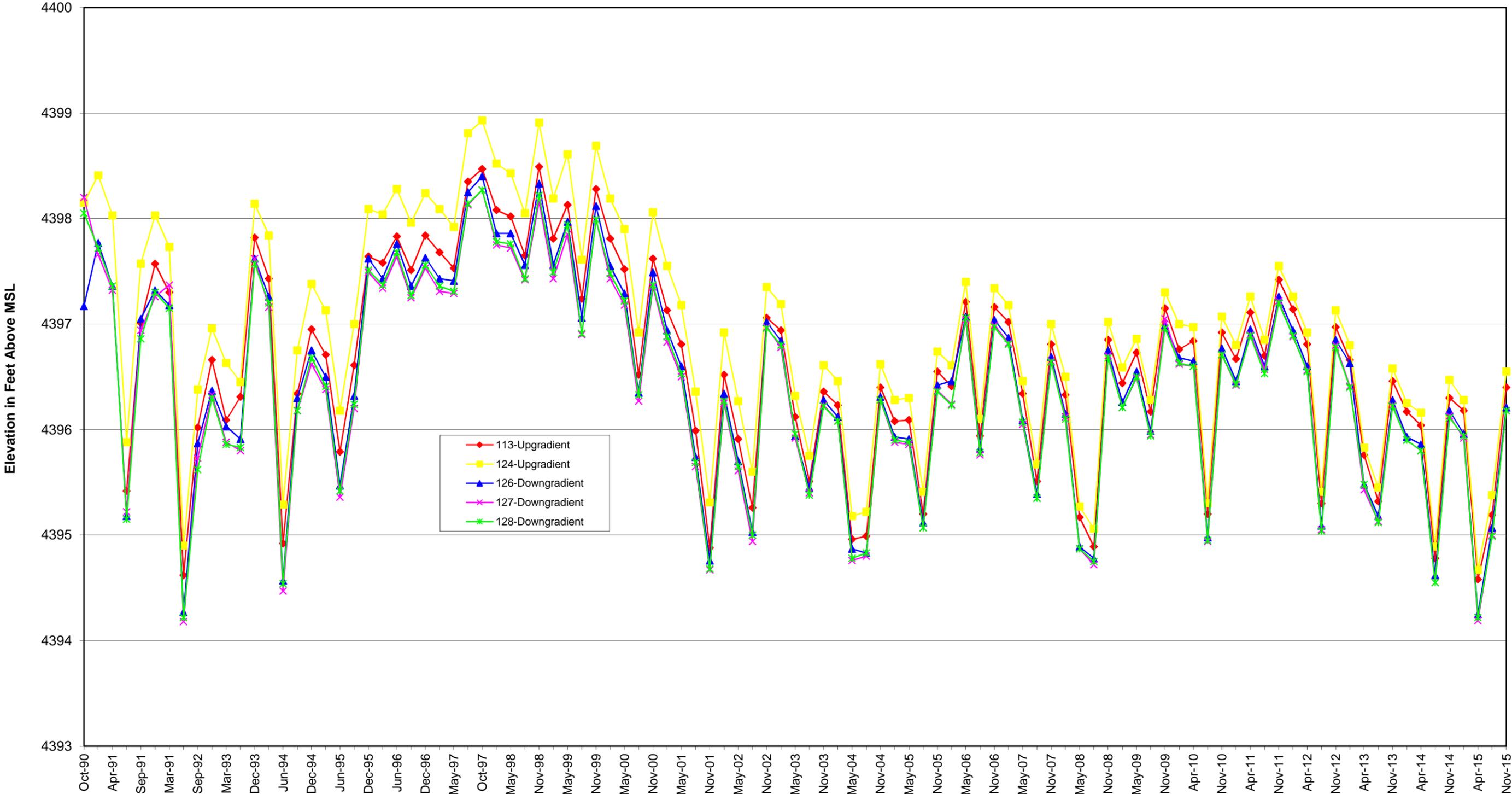


Figure 12. Hydrographs for Monitoring Wells for WMU #10 - Pond 16S

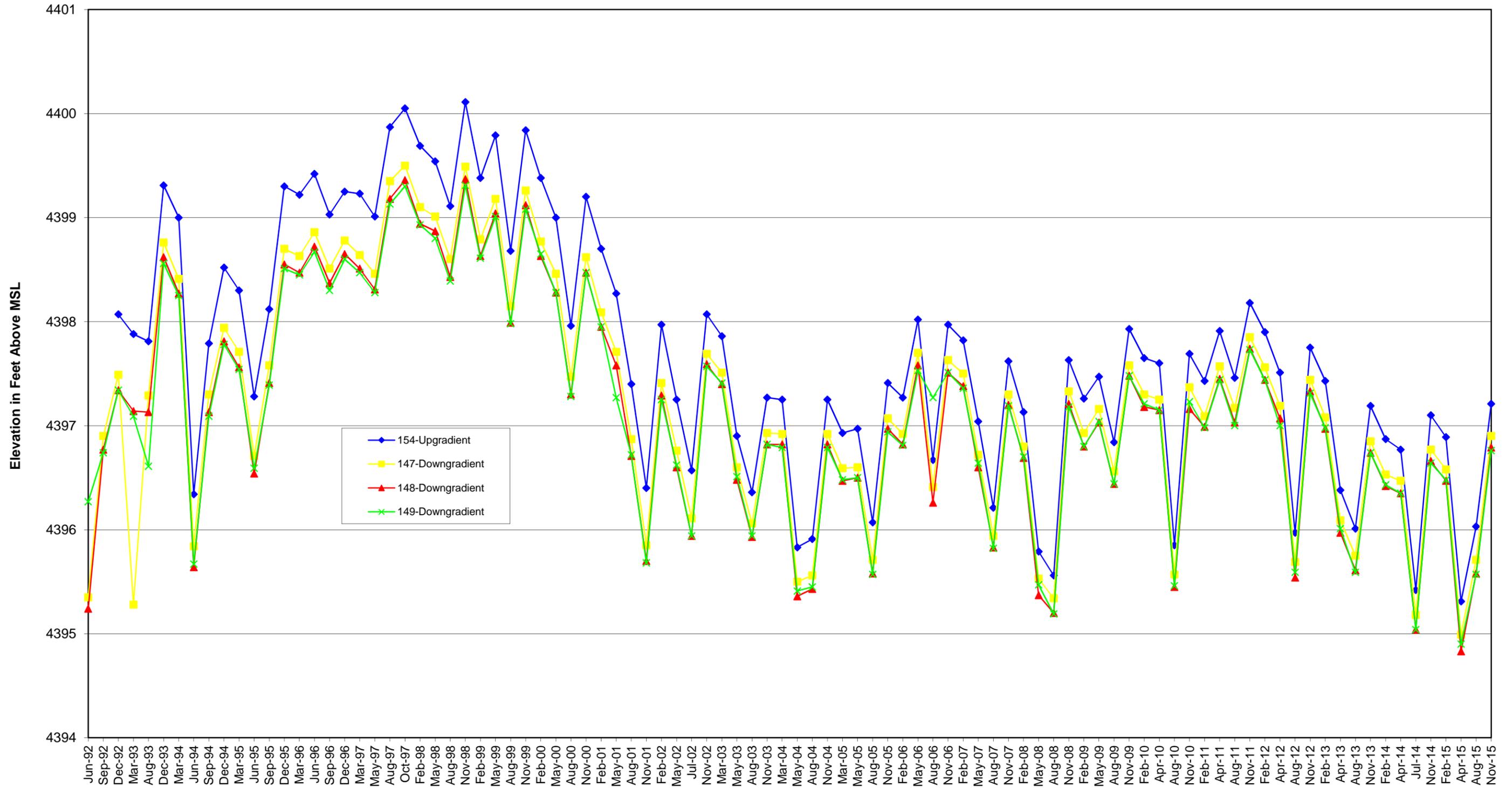


Figure 13. Hydrographs for Monitoring Wells for WMU #14 - Pond 17

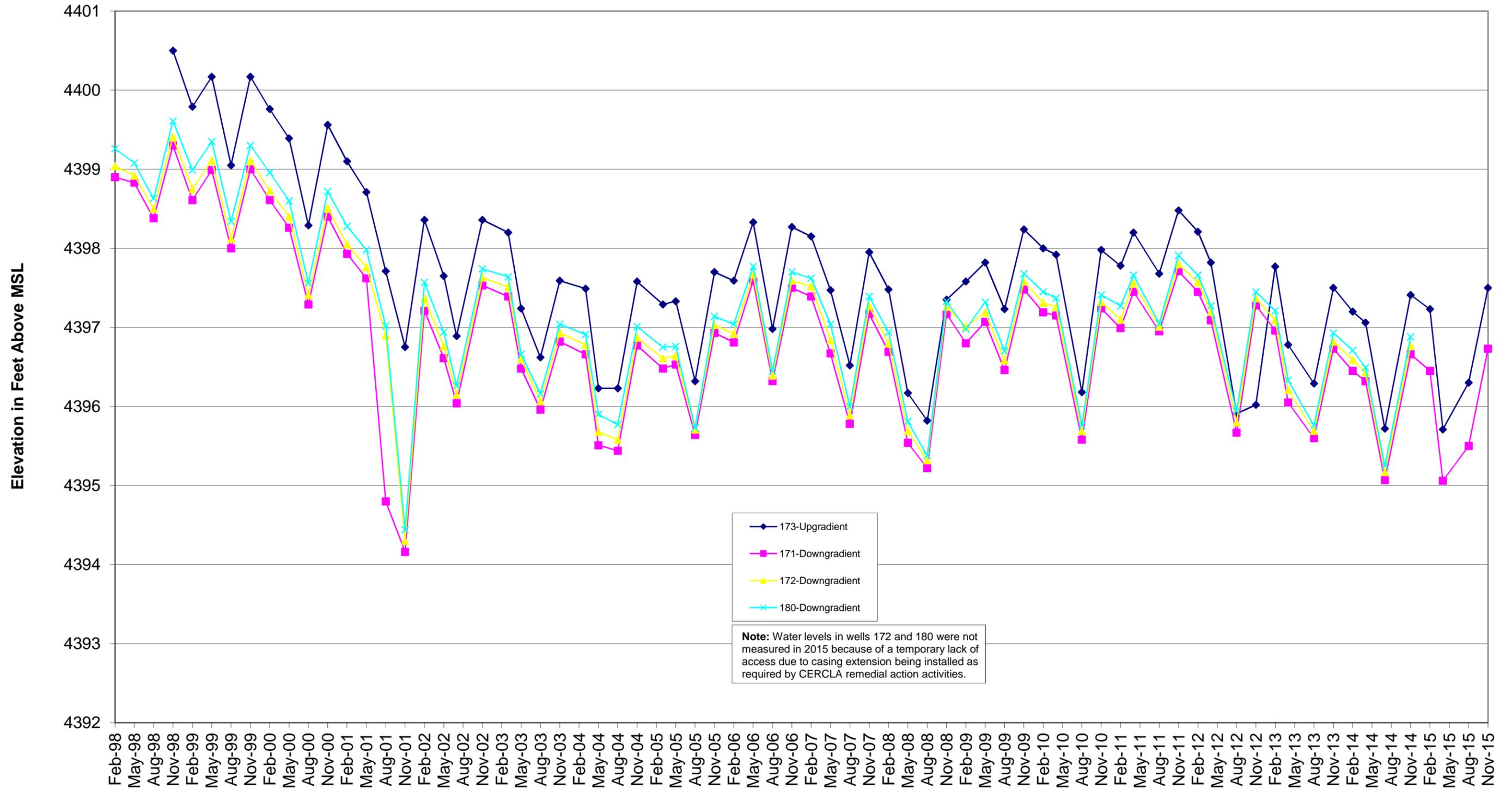


Figure 14. Hydrographs for Monitoring Wells for WMU #15 - Pond 18 Cell A

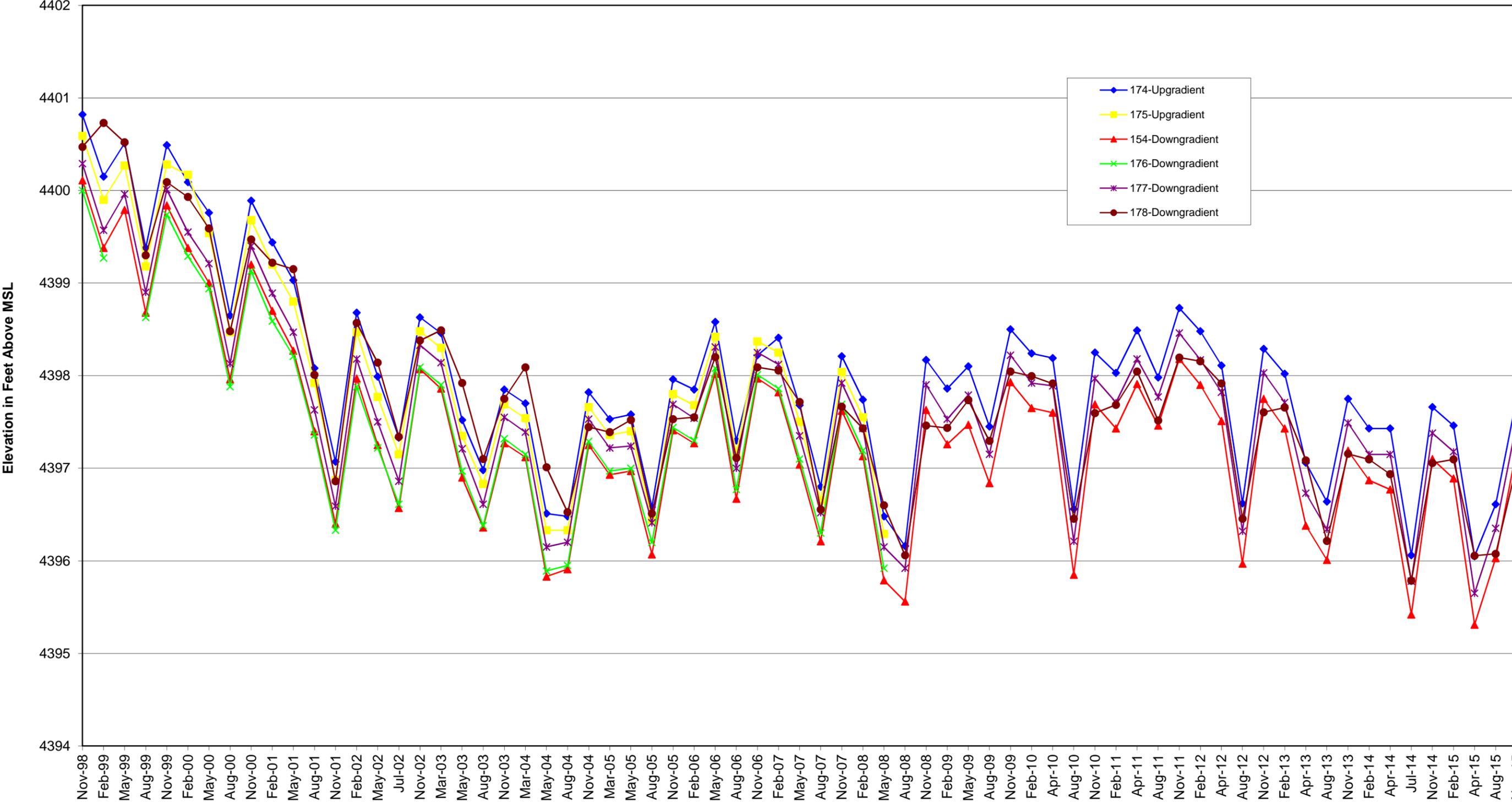


Figure 15. Elemental Phosphorus Concentrations at Well 108/108A

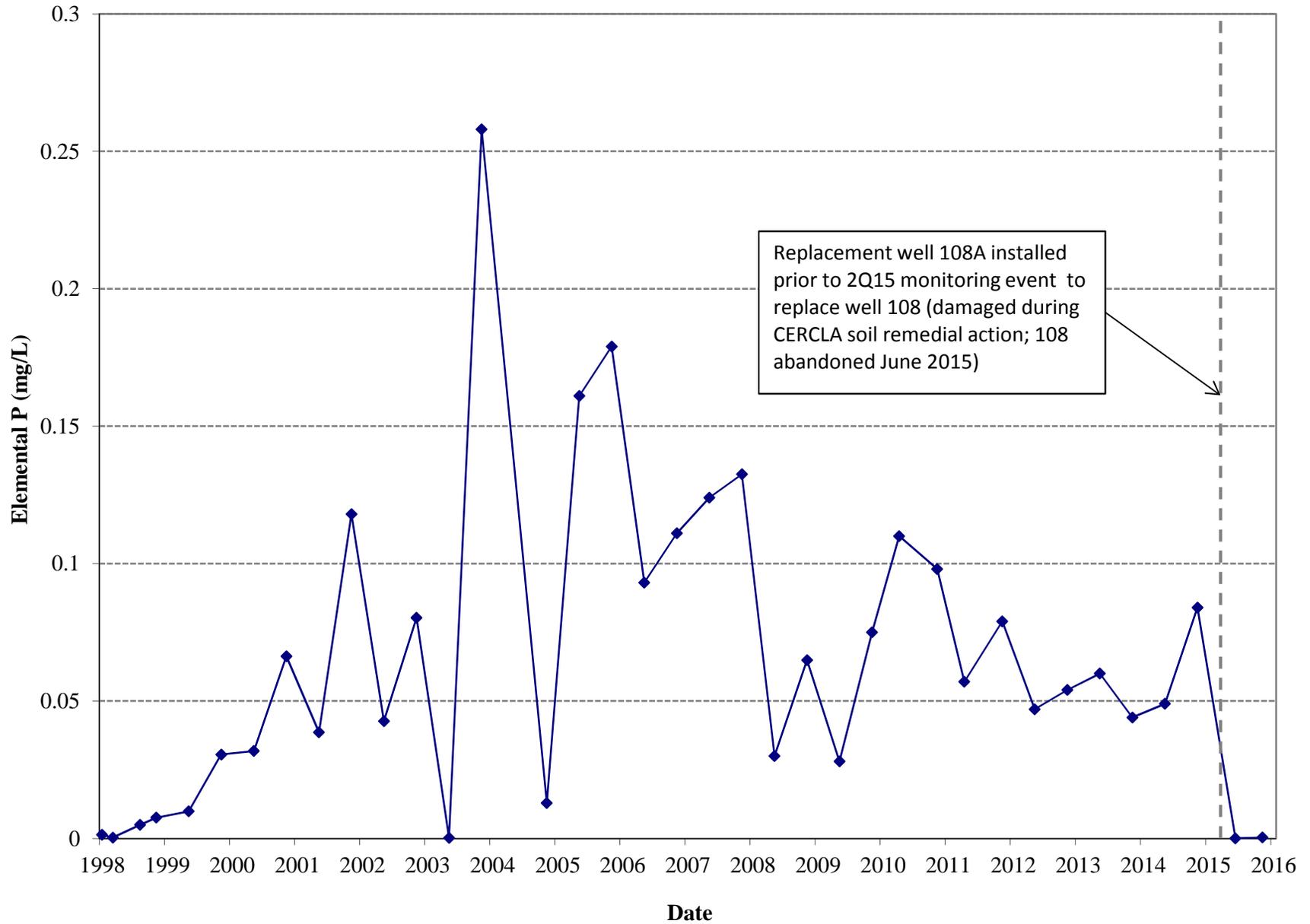
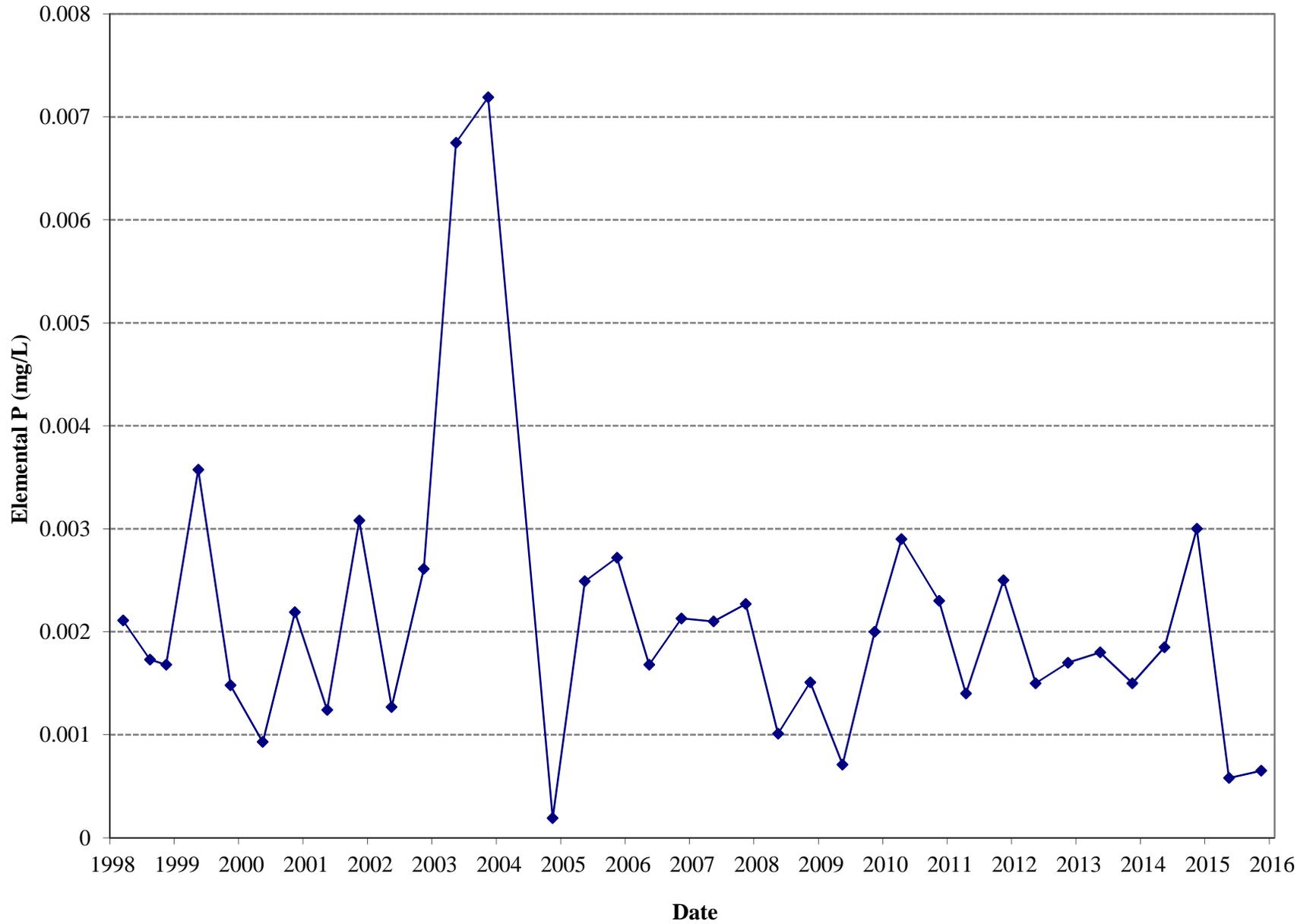


Figure 16. Elemental Phosphorus Concentrations at Well 122



APPENDIX A

STATISTICAL TABLES AND TIME SERIES PLOTS

POND 15S

Waste Management Unit 3

Note:

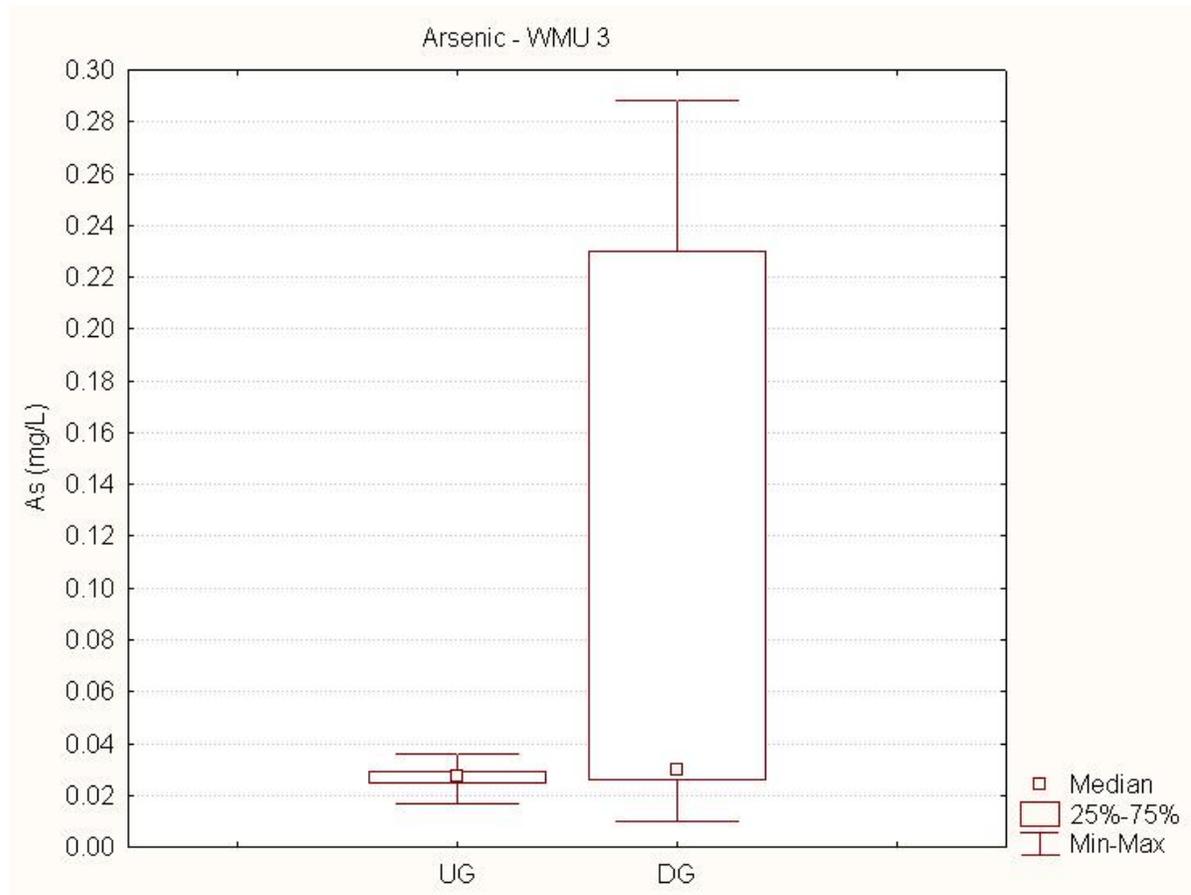
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

WMU 3 TEST 1 ARSENIC

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	80	0.027	10622.0	7382.0	-4.41	<0.0001
Downgradient	273	0.030	51859.0			

Summary: The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 15S (WMU 3)

Arsenic

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Sep-91	N.S.	0.0366	0.1790	N.S.
Dec-91	N.S.	0.0382	0.1830	N.S.
Mar-92	N.S.	0.0349	0.1900	N.S.
Jun-92	N.S.	0.0308	0.2070	N.S.
Sep-92	N.S.	0.0303	0.1772	N.S.
Dec-92	N.S.	0.0321	0.2023	N.S.
Mar-93	N.S.	0.0394	0.1546	N.S.
Jun-93	N.S.	0.0291	0.2524	N.S.
Sep-93	N.S.	0.0350	0.1875	N.S.
Dec-93	N.S.	0.0276	0.1665	N.S.
Mar-94	N.S.	0.0372	0.2231	N.S.
Jun-94	N.S.	0.0271	0.1314	N.S.
Sep-94	N.S.	0.0198	0.1715	N.S.
Dec-94	N.S.	0.0362	0.2101	N.S.
Mar-95	N.S.	0.0250	0.2204	N.S.
Jun-95	N.S.	0.0257	0.2389	N.S.
Sep-95	0.0165	U	0.2033	0.0244
Dec-95	0.0284	0.0267	0.1756	0.0210
Mar-96	U	0.0281	0.1678	0.0212
Jun-96	0.0270	0.0278	0.1532	0.0235
Sep-96	0.0280	0.0320	0.2000	0.0320
Dec-96	U	U	0.2300	U
Mar-97	0.0290	0.0270	0.2100	0.0280
Jun-97	0.0290	0.0320	0.2300	0.0290
Sep-97	0.0360	0.0350	0.2300	0.0310
Dec-97	0.0310	0.0290	0.2100	0.0270
Feb-98	0.0240	0.0270	0.1900	0.0250
May-98	0.0320	0.0300	0.2300	0.0260
Aug-98	0.0290	0.0270	0.2100	0.0240
Nov-98	0.0280	0.0290	0.2100	0.0220
Feb-99	0.0250	0.0300	0.2000	0.0260
May-99	0.0320	0.0340	0.2400	0.0280
Aug-99	0.0285	0.0281	0.2220	0.0268
Nov-99	0.0320	0.0311	0.2530	0.0294
Mar-00	0.0270	0.0305	0.2480	U
May-00	0.0288	0.0306	0.2330	0.0273
Aug-00	0.0302	0.0286	0.2540	0.0286
Nov-00	0.0305	0.0337	0.2480	0.0264
Feb-01	0.0288	0.0303	0.2460	0.0273
May-01	0.0267	0.0307	0.2630	0.0260
Aug-01	0.0293	0.0275	0.2850	0.0271
Nov-01	0.0284	0.0281	0.2690	0.0228
Mar-02	0.0307	0.0313	0.2720	0.0245
May-02	0.0281	0.0290	0.2740	0.0279
Jul-02	0.0241	0.0316	0.2580	0.0252
Nov-02	0.0299	0.0298	0.2610	0.0267
Mar-03	0.0318	0.0282	0.2740	0.0253
May-03	0.0281	0.0286	0.2770	0.0249

TEST 2
STATISTICS FOR POND 15S (WMU 3)

Arsenic

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Aug-03	0.0253	0.0292	0.2490	0.0245
Nov-03	0.0274	0.0097	0.2670	0.0243
Mar-04	0.0266	0.0316	0.2780	0.0249
May-04	0.0244	0.0303	0.2690	0.0241
Aug-04	0.0258	0.0273	0.2810	0.0247
Nov-04	0.0289	0.0281	0.2800	0.0268
Feb-05	0.0310	0.0327	0.2880	0.0253
May-05	0.0309	0.0317	0.2860	0.0248
Aug-05	0.0264	0.0331	0.2740	0.0241
Nov-05	0.0263	0.0284	0.2700	0.0241
Feb-06	0.0245	0.0295	0.2740	0.0241
May-06	0.0290	0.0282	0.2850	0.0215
Aug-06	0.0305	0.0330	0.2880	0.0278
Nov-06	0.0276	0.0291	0.2800	0.0205
Feb-07	0.0290	0.0275	0.2700	0.0223
May-07	0.0278	0.0266	0.2710	0.0197
Aug-07	0.0231	0.0276	0.2620	0.0228
Nov-07	0.0207	0.0236	0.2380	0.0156
Feb-08	0.0237	0.0283	0.2390	0.0208
May-08	0.0261	0.0211	0.2420	U
Aug-08	0.0245	0.0283	0.2690	0.0218
Nov-08	0.0261	0.0267	0.2510	0.0200
Feb-09	0.0274	0.0271	0.2560	0.0210
May-09	0.0266	0.0245	0.2350	0.0213
Aug-09	0.0281	0.0279	0.2550	0.0199
Nov-09	0.0300	0.0304	0.2630	0.0239
Feb-10	0.0281	0.0296	0.2630	0.0217
Apr-10	0.0295	0.0343	0.2570	0.0247
Jul-10	0.0251	0.0296	0.2640	0.0201
Nov-10	0.0256	0.0266	0.2390	0.0186
Mar-11	0.0234	0.0264	0.2490	0.0188
Apr-11	0.0272	0.0300	0.2480	0.0220
Aug-11	0.0270	0.0310	0.2700	0.0200
Nov-11	0.0280	0.0270	0.2400	0.0180
Feb-12	0.0201	0.0213	0.1870	0.0130
May-12	0.0238	0.0243	0.2200	0.0178
Aug-12	0.0210	0.0250	0.2200	0.0170
Oct-12	0.0250	0.0260	0.2400	0.0180
Feb-13	0.0260	0.0270	0.2300	0.0180
May-13	0.0250	0.0290	0.2500	0.0200
Jul-13	0.0230	0.0290	0.2500	0.0200
Nov-13	0.0280	0.0300	0.2700	0.0200
Feb-14	0.0240	0.0270	0.2400	0.0180
Apr-14	0.0250	0.0270	0.2400	0.0190
Jul-14	0.0230	0.0280	0.2500	0.0190
Nov-14	0.0240	0.0270	0.2300	0.0180
Feb-15	<i>0.0260</i>	<i>0.0280</i>	<i>0.2500</i>	<i>0.0190</i>
May-15	<i>0.0230</i>	<i>0.0270</i>	<i>0.2400</i>	<i>0.0180</i>

TEST 2
STATISTICS FOR POND 15S (WMU 3)

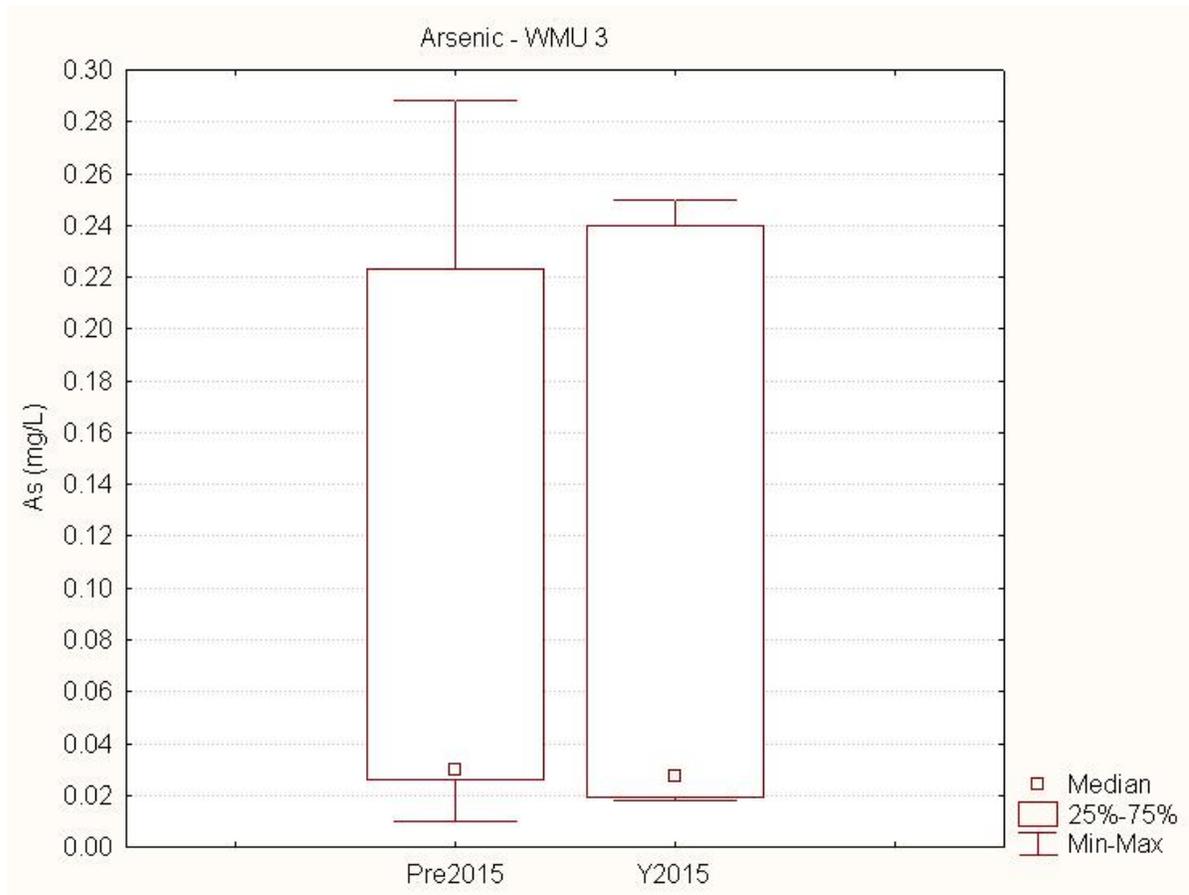
Arsenic				
<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Jul-15	<i>0.0230</i>	<i>0.0260</i>	<i>0.2400</i>	<i>0.0180</i>
Nov-15	<i>0.0260</i>	<i>0.0280</i>	<i>0.2500</i>	<i>0.0190</i>
Test 2 Results				
	Well 165	Well 113	Well 115	Well 166
Pre-2015 Mean	0.0271	0.0291	0.2372	0.0232
2015 Mean	0.0245	0.0273	0.2450	0.0185
1991-2015 Statistical Summary				
Mean	0.0269	0.0290	0.2375	0.0229
Median	0.0271	0.0286	0.2440	0.0235
Standard Deviation	0.0031	0.0040	0.0350	0.0038
Kurtosis	1.0446	5.6671	0.1353	-0.5043
Skewness	-0.3014	-0.8570	-0.8266	-0.0053
Minimum	0.0165	0.0097	0.1314	0.0130
Maximum	0.0360	0.0394	0.2880	0.0320
Count	80	96	98	79
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.</p>				

WMU 3 TEST 3 ARSENIC

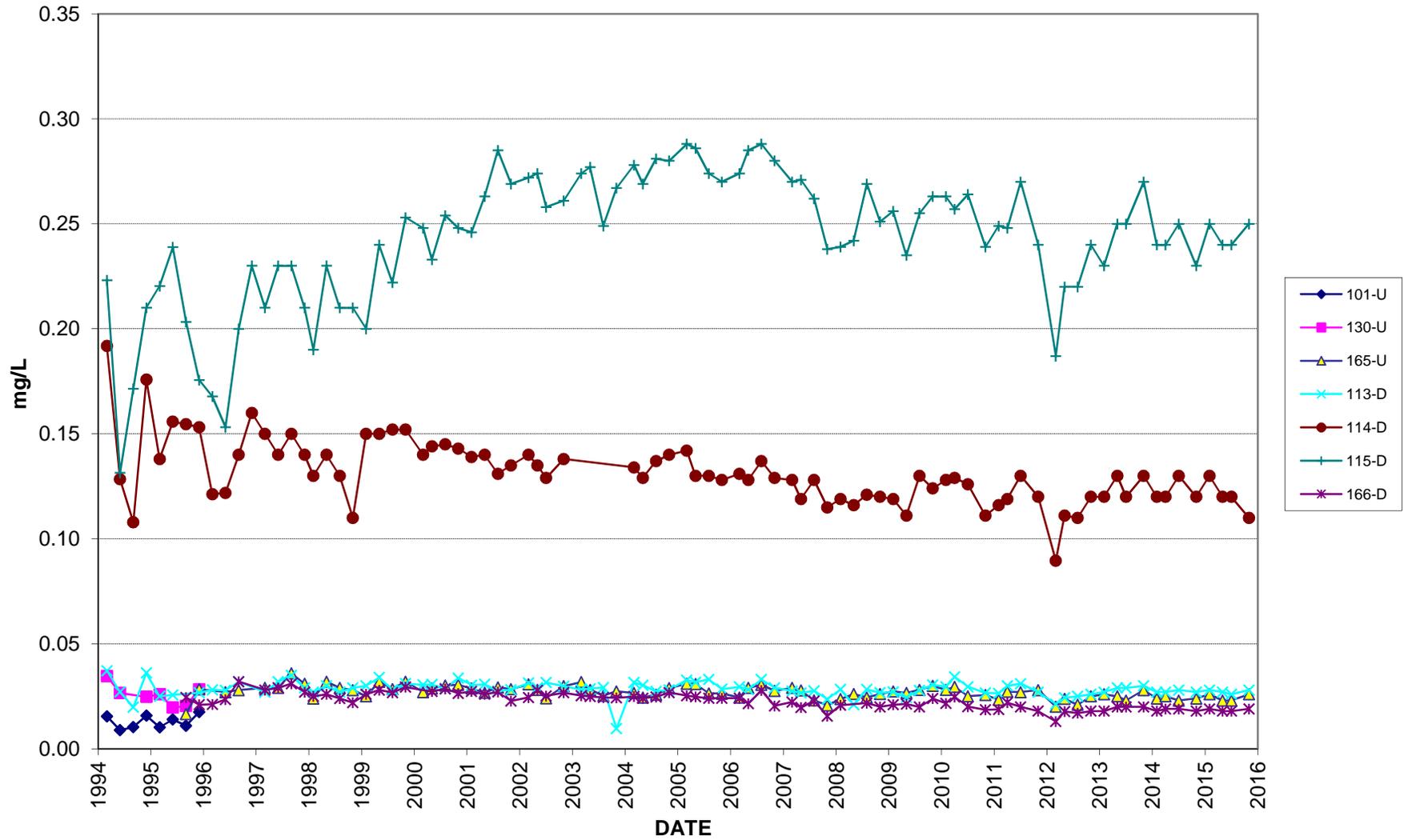
Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2015	261	0.030	36057.5	1265.5	1.12	0.26
Year 2015	12	0.028	1343.5			

Summary: For downgradient wells, the median of Pre-2015 arsenic concentration is not significantly different from the median of Year 2015 arsenic concentration.



Arsenic in Groundwater (WMU 3)

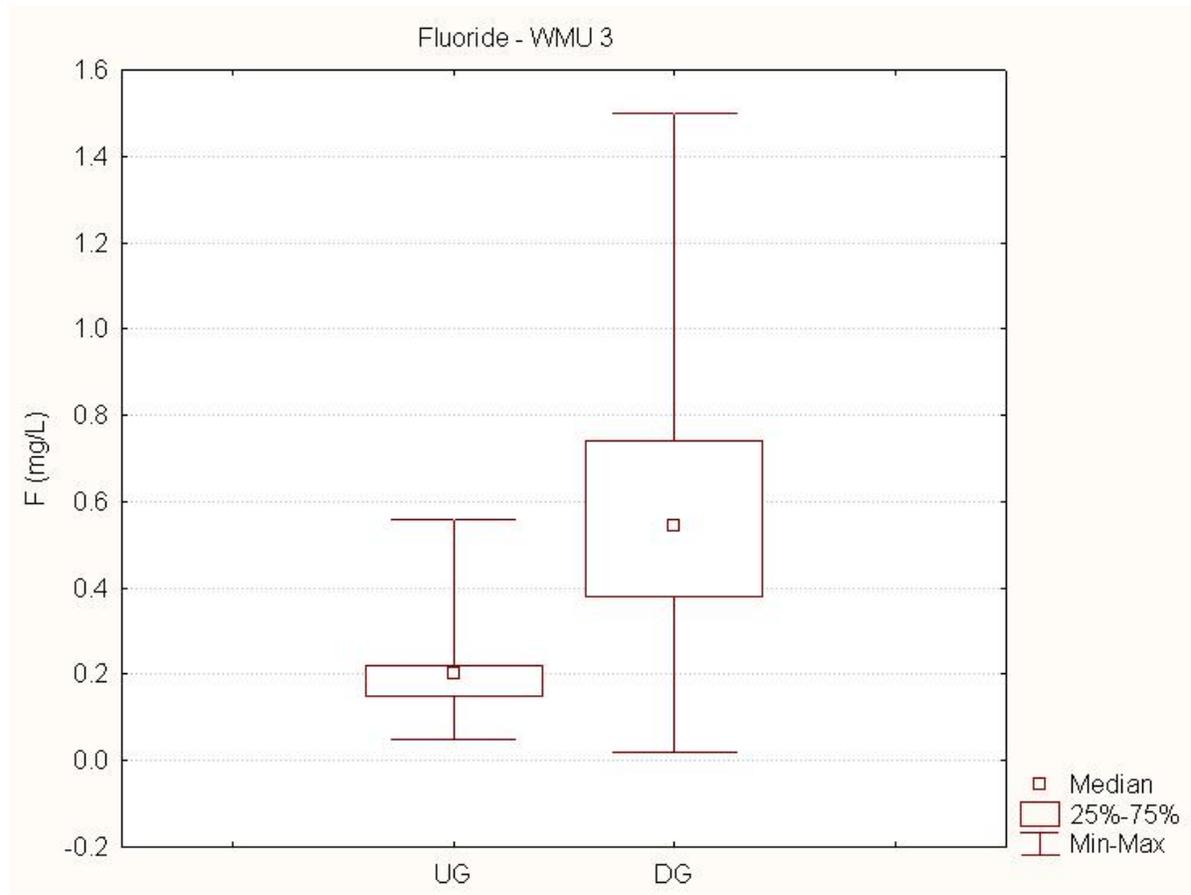


WMU 3 TEST 1 FLUORIDE

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	73	0.200	4594.5	1893.5	-9.97	<0.0001
Downgradient	230	0.55	41461.5			

Summary: The median fluoride concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 15S (WMU 3)

Date	Fluoride			
	Upgradient Well	Downgradient Wells		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Sep-91	N.S.	0.800	0.200	N.S.
Dec-91	N.S.	0.960	0.200	N.S.
Mar-92	N.S.	1.000	0.200	N.S.
Jun-92	N.S.	0.772	0.110	N.S.
Sep-92	N.S.	0.770	0.131	N.S.
Dec-92	N.S.	0.800	0.100	N.S.
Mar-93	N.S.	0.800	0.200	N.S.
Jun-93	N.S.	0.800	0.200	N.S.
Sep-93	N.S.	0.800	U	N.S.
Dec-93	N.S.	0.700	U	N.S.
Mar-94	N.S.	0.800	U	N.S.
Jun-94	N.S.	0.760	U	N.S.
Sep-94	N.S.	0.700	U	N.S.
Dec-94	N.S.	0.800	U	N.S.
Mar-95	N.S.	0.764	U	N.S.
Jun-95	N.S.	0.704	U	N.S.
Sep-95	0.300	0.848	U	0.870
Dec-95	0.242	0.612	U	0.802
Mar-96	U	U	U	U
Jun-96	0.242	0.736	0.158	1.030
Sep-96	U	U	U	U
Dec-96	0.160	0.620	0.240	0.780
Mar-97	0.150	0.540	U	0.830
Jun-97	0.150	0.620	U	0.770
Sep-97	U	0.550	U	0.890
Dec-97	U	0.540	U	0.820
Feb-98	0.140	0.560	U	0.950
May-98	0.170	0.530	U	0.930
Aug-98	0.160	0.530	U	0.850
Nov-98	0.170	0.570	U	0.950
Feb-99	0.180	0.540	0.100	1.020
May-99	U	0.500	0.100	0.910
Aug-99	0.100	0.550	U	0.970
Nov-99	U	U	U	U
Mar-00	0.11	0.56	U	0.89
May-00	U	U	U	U
Aug-00	0.12	0.41	U	0.91
Nov-00	0.23	0.52	U	0.9
Feb-01	0.11	0.46	U	0.79
May-01	0.05	0.47	U	0.8
Aug-01	U	0.32	U	0.57
Nov-01	0.19	0.46	U	0.63
Mar-02	0.11	0.44	0.14	0.84
May-02	0.27	0.48	N.S.	0.84
Jul-02	0.09	0.51	N.S.	0.76
Nov-02	0.22	0.68	U	0.98
Mar-03	0.25	0.56	U	0.95
May-03	0.3	0.48	U	0.78
Aug-03	U	0.6	U	0.69

TEST 2
STATISTICS FOR POND 15S (WMU 3)

Date	Fluoride			
	Upgradient Well	Downgradient Wells		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Nov-03	0.24	0.51	0.020	0.76
Mar-04	0.22	0.5	0.36	0.79
May-04	0.098	0.48	0.091	0.73
Aug-04	0.1	0.49	0.33	0.74
Nov-04	0.32	0.5	1.100	0.76
Mar-05	0.33	0.5	0.29	0.89
May-05	0.21	0.56	0.31	0.71
Aug-05	0.061	0.61	0.43	0.87
Nov-05	0.2	0.53	0.3	0.73
Feb-06	0.18	0.48	0.3	0.71
May-06	0.17	0.43	0.23	0.66
Aug-06	0.07	0.45	0.27	0.61
Nov-06	0.15	0.42	0.23	0.64
Feb-07	0.2	0.4	0.18	0.56
May-07	0.2	0.42	0.23	0.62
Aug-07	0.1	0.4	0.2	0.5
Nov-07	0.2	0.4	0.2	0.6
Feb-08	0.4	0.6	0.3	0.8
May-08	0.3	0.5	0.3	0.7
Aug-08	0.2	0.5	0.2	0.6
Nov-08	0.2	0.5	0.2	0.6
Feb-09	0.2	0.6	U	0.8
May-09	0.2	0.5	0.2	0.6
Aug-09	0.2	0.6	0.2	0.8
Nov-09	0.3	0.5	0.2	0.7
Feb-10	0.3	0.5	0.2	0.8
Apr-10	0.2	0.6	0.2	0.8
Jul-10	0.17	0.5	0.19	0.56
Nov-10	0.18	0.46	0.11	0.5
Mar-11	0.32	0.47	0.20	0.79
Apr-11	0.26	0.48	0.22	0.69
Aug-11	0.13	0.43	0.23	0.72
Nov-11	0.22	0.56	0.22	0.55
Feb-12	0.56	1.5	U	1.1
May-12	0.16	0.44	U	0.69
Aug-12	0.2	0.44	0.17	0.61
Oct-12	0.16	0.44	0.14	0.65
Feb-13	0.19	0.46	0.14	0.72
May-13	0.19	0.45	0.13	0.7
Jul-13	0.22	0.48	0.18	0.66
Nov-13	0.11	0.29	0.091	0.28
Feb-14	0.2	0.45	0.21	0.69
Apr-14	0.2	0.29	0.029	0.38
Jul-14	0.12	0.33	0.27	0.41
Nov-14	0.19	0.45	0.81	0.68
Feb-15	0.18	0.43	0.75	0.68
May-15	0.20	0.43	U	0.64
Jul-15	0.21	0.45	1.10	0.67
Nov-15	0.18	0.42	0.57	0.67

TEST 2
STATISTICS FOR POND 15S (WMU 3)

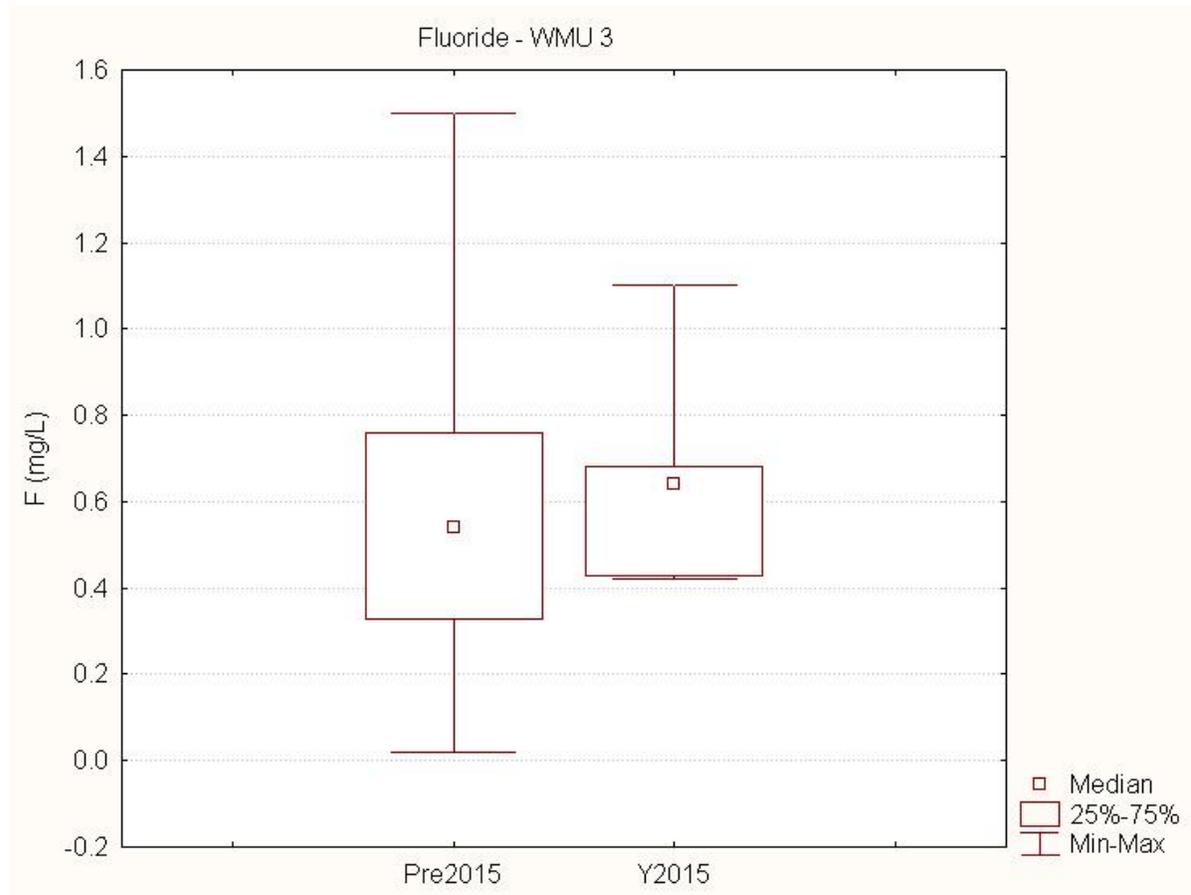
Fluoride				
<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Test 2 Results				
	Well 165	Well 113	Well 115	Well 166
Pre-2015 Mean	0.1963	0.5632	0.2276	0.7454
2015 Mean	0.1925	0.4325	0.8067	0.6650
1991-2015 Statistical Summary				
Mean	0.1961	0.5602	0.2571	0.7413
Median	0.2000	0.5000	0.2000	0.7350
Standard Deviation	0.0806	0.1726	0.2123	0.1507
Kurtosis	4.9420	8.6290	8.1951	0.5730
Skewness	1.4411	2.1968	2.7664	-0.2849
Minimum	0.0500	0.2900	0.0200	0.2800
Maximum	0.5600	1.5000	1.1000	1.1000
Count	73	94	58	78
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.				

WMU 3 TEST 3 FLUORIDE

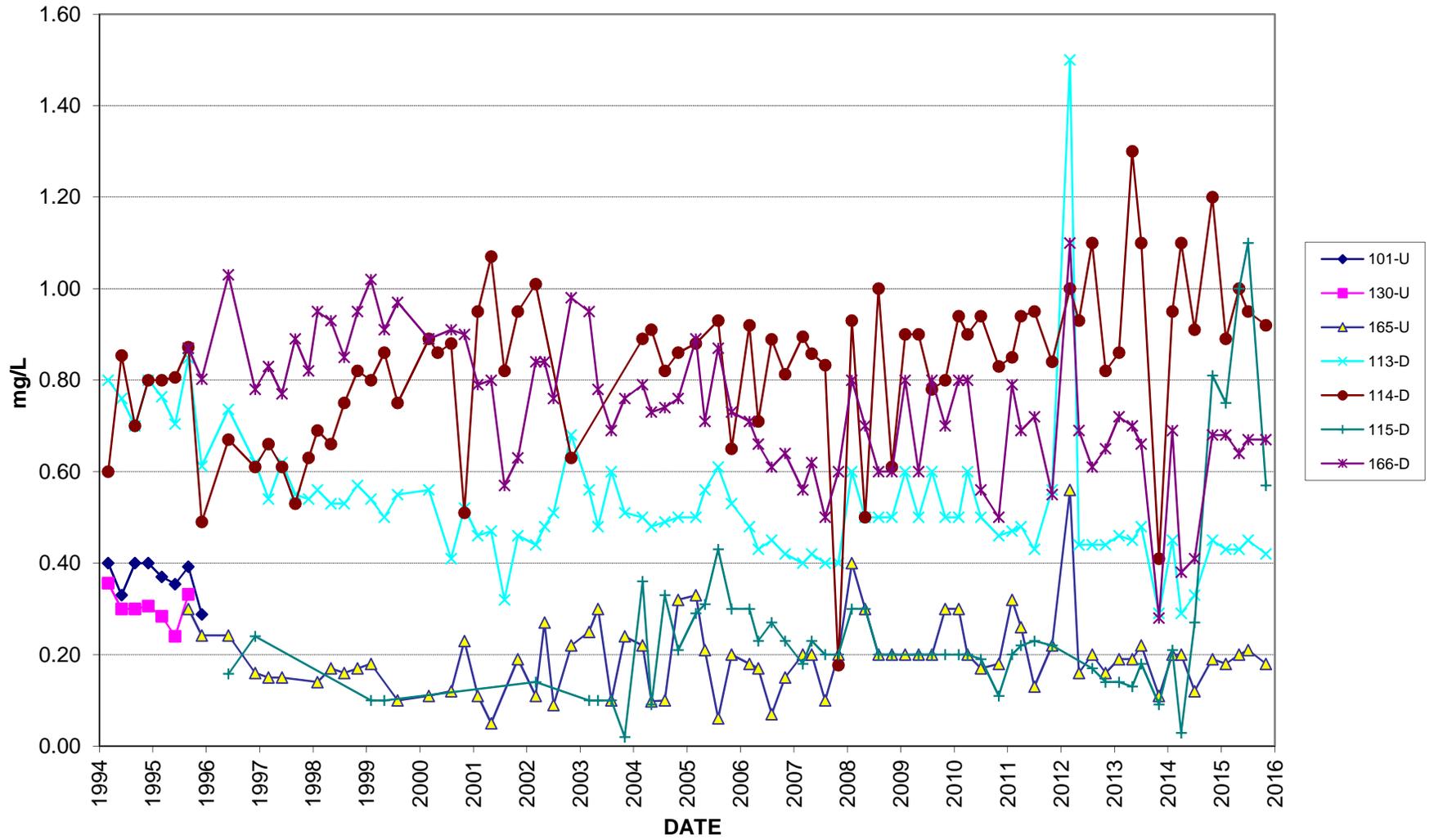
Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2015	219	0.54	25146.5	1056.5	-0.69	0.49
Year 2015	11	0.64	1418.5			

Summary: For downgradient wells, the median of Pre-2015 fluoride concentration is not significantly different from the median of Year 2015 fluoride concentration.



Fluoride in Groundwater (WMU 3)

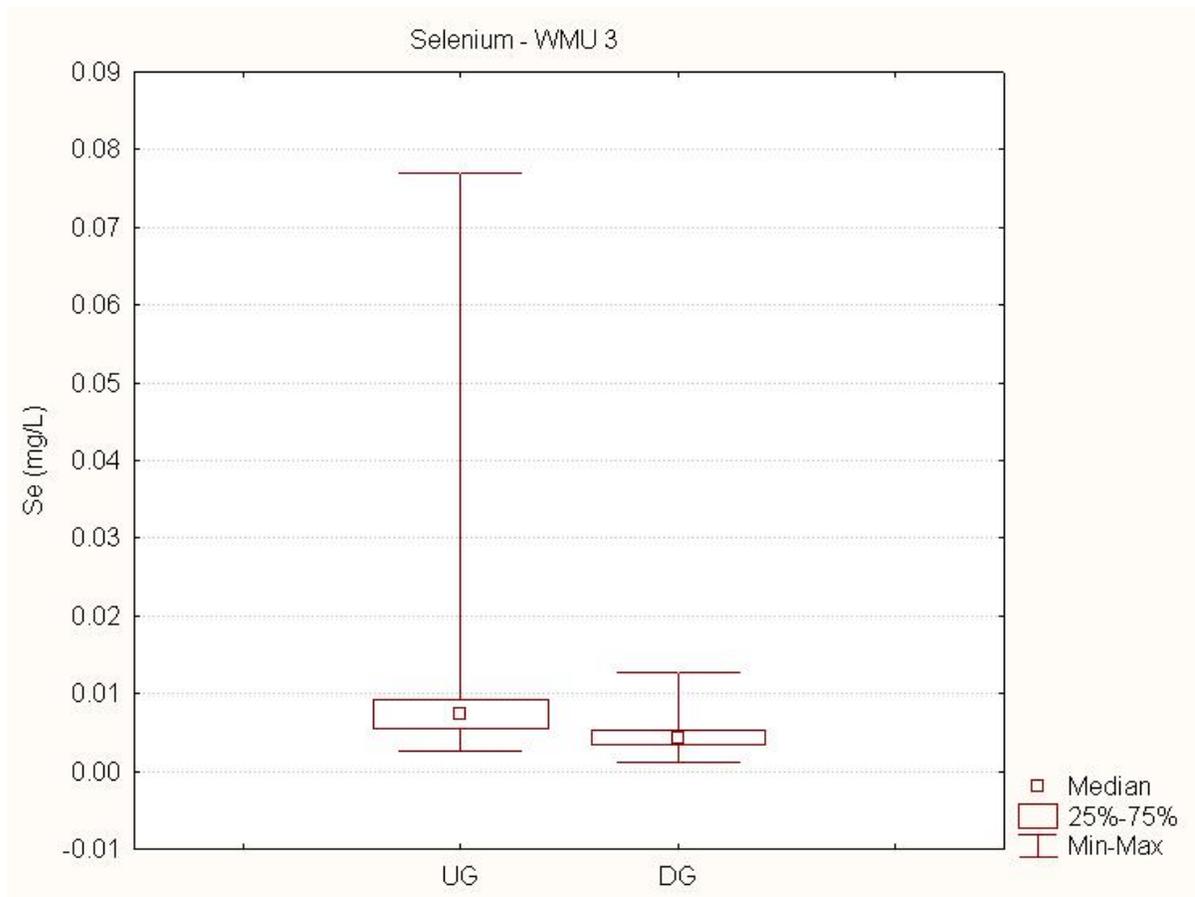


WMU 3 TEST 1 SELENIUM

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	69	0.0073	13097.0	1738.0	8.79	<0.0001
Downgradient	180	0.0042	18028.0			

Summary: The median selenium concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 15S (WMU 3)

Date	Selenium			
	Upgradient Well	Downgradient Wells		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Sep-91	N.S.	0.0020	0.0020	N.S.
Dec-91	N.S.	0.0033	0.0029	N.S.
Mar-92	N.S.	0.0020	0.0020	N.S.
Jun-92	N.S.	U	U	N.S.
Sep-92	N.S.	U	U	N.S.
Dec-92	N.S.	U	0.0079	N.S.
Mar-93	N.S.	0.0047	0.0032	N.S.
Jun-93	N.S.	0.0013	0.0011	N.S.
Sep-93	N.S.	0.0023	0.0033	N.S.
Dec-93	N.S.	U	U	N.S.
Mar-94	N.S.	U	U	N.S.
Jun-94	N.S.	0.0076	U	N.S.
Sep-94	N.S.	U	0.0038	N.S.
Dec-94	N.S.	0.0024	U	N.S.
Mar-95	N.S.	U	U	N.S.
Jun-95	N.S.	U	U	N.S.
Sep-95	0.0094	U	U	0.0084
Dec-95	0.0039	U	0.0033	0.0032
Mar-96	U	U	U	U
Jun-96	U	U	0.0031	U
Sep-96	U	U	U	0.0035
Dec-96	0.0069	0.0036	U	0.0045
Mar-97	0.0068	0.0061	U	0.0077
Jun-97	U	0.0043	U	U
Sep-97	U	U	U	U
Dec-97	0.0056	0.0062	0.0048	0.0046
Feb-98	0.0076	0.0036	0.0034	0.0041
May-98	0.0049	U	0.0036	U
Aug-98	0.0110	U	U	0.0056
Nov-98	0.0094	0.0040	0.0041	0.0049
Feb-99	U	0.0036	U	U
May-99	0.0052	0.0041	0.0034	0.0044
Aug-99	0.0059	0.0060	U	U
Nov-99	0.0084	0.0049	0.0047	0.0066
Mar-00	U	U	U	U
May-00	0.0094	U	U	0.0033
Aug-00	0.0063	0.0037	U	U
Nov-00	0.0056	U	0.0071	0.0051
Feb-01	0.0052	U	U	0.0054
May-01	0.0092	0.0046	0.0050	0.0077
Aug-01	0.0080	U	0.0039	0.0046
Nov-01	0.0082	0.0038	U	U
Mar-02	0.0079	0.0034	U	0.0081
May-02	0.0097	0.0057	U	0.0127
Jul-02	0.0112	0.0047	0.0032	0.0043
Nov-02	0.0069	U	0.0039	0.0052
Mar-03	U	0.0037	U	U
May-03	0.0099	U	0.0032	0.0051
Aug-03	0.0125	0.0046	0.0048	0.0060

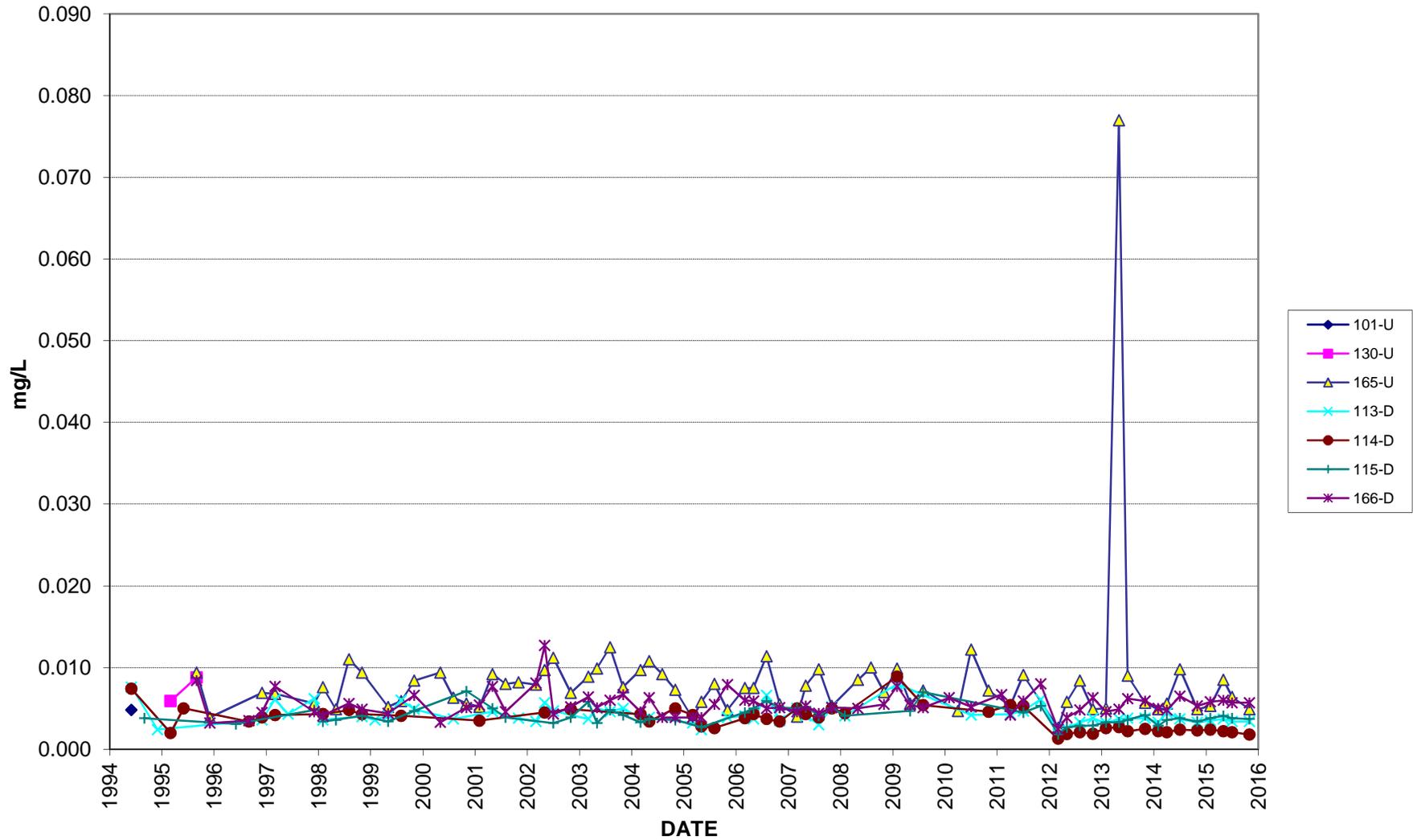
TEST 2
STATISTICS FOR POND 15S (WMU 3)

Selenium				
<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Nov-03	0.0076	U	0.0042	0.0067
Mar-04	0.0097	0.0038	0.0033	0.0046
May-04	0.0108	0.0039	0.0037	0.0063
Aug-04	0.0092	U	U	0.0039
Nov-04	0.0073	U	0.0036	0.0039
Mar-05	0.0038	0.0032	U	0.0039
May-05	0.0058	0.0024	0.0027	0.0039
Aug-05	0.0080	U	U	0.0055
Nov-05	0.0048	0.0039	U	0.0079
Feb-06	0.0075	0.0041	0.0045	0.0060
May-06	0.0075	0.0037	U	0.0059
Aug-06	0.0114	0.0066	0.0059	0.0050
Nov-06	0.0055	0.0035	0.0051	0.0051
Feb-07	0.0040	U	U	0.0046
May-07	0.0078	0.0041	0.0052	0.0053
Aug-07	0.0098	0.0030	0.0041	0.0044
Nov-07	0.0053	0.0052	U	0.0051
Feb-08	U	0.0041	0.0041	U
May-08	0.0085	U	U	0.0050
Aug-08	0.0100	U	U	U
Nov-08	0.0070	U	U	0.0055
Feb-09	0.0099	0.0080	U	0.0077
May-09	0.0056	U	0.0047	0.0054
Aug-09	0.0072	U	0.0070	0.0051
Nov-09	U	U	U	U
Feb-10	U	U	U	0.0063
Apr-10	0.0047	U	U	U
Jul-10	0.0122	0.0042	U	0.0052
Nov-10	0.0072	U	U	U
Mar-11	U	U	U	0.0067
Apr-11	0.0053	0.0043	U	0.0042
Aug-11	0.0091	0.0047	0.0045	0.0059
Nov-11	U	0.0061	0.0053	0.0080
Feb-12	0.0027	0.0019	0.0019	0.0025
May-12	0.0058	0.0025	0.0027	0.0039
Aug-12	0.0084	0.0033	0.0029	0.0048
Oct-12	0.0049	0.0038	0.0029	0.0063
Feb-13	0.0050	0.0032	0.0033	0.0046
May-13	0.0770	0.0037	0.0033	0.0049
Jul-13	0.0090	0.0038	0.0036	0.0062
Nov-13	0.0057	0.0037	0.0042	0.0059
Feb-14	0.0049	0.0033	0.0029	0.0050
Apr-14	0.0056	0.0045	0.0036	0.0048
Jul-14	0.0098	0.0037	0.0038	0.0065
Nov-14	0.0049	0.0033	0.0034	0.0053
Feb-15	<i>0.0053</i>	<i>0.0035</i>	<i>0.0038</i>	<i>0.0058</i>
May-15	<i>0.0085</i>	<i>0.0037</i>	<i>0.0041</i>	<i>0.0060</i>
Jul-15	<i>0.0064</i>	<i>0.0034</i>	<i>0.0038</i>	<i>0.0057</i>
Nov-15	<i>0.0049</i>	<i>0.0034</i>	<i>0.0037</i>	<i>0.0057</i>

TEST 2
STATISTICS FOR POND 15S (WMU 3)

Selenium				
<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Test 2 Results				
	Well 165	Well 113	Well 115	Well 166
Pre-2015 Mean	0.0085	0.0040	0.0039	0.0055
2015 Mean	0.0063	0.0035	0.0039	0.0058
1991-2015 Statistical Summary				
Mean	0.0084	0.0040	0.0039	0.0055
Median	0.0073	0.0038	0.0037	0.0052
Standard Deviation	0.0087	0.0013	0.0012	0.0015
Kurtosis	59.7844	1.5556	2.2417	6.3289
Skewness	7.4767	0.8934	0.9865	1.7142
Minimum	0.0027	0.0013	0.0011	0.0025
Maximum	0.0770	0.0080	0.0079	0.0127
Count	69	60	54	66
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.</p>				

Selenium in Groundwater (WMU 3)



SLAG PIT WASTE WATER COLLECTION SUMP

Waste Management Unit 5

Note:

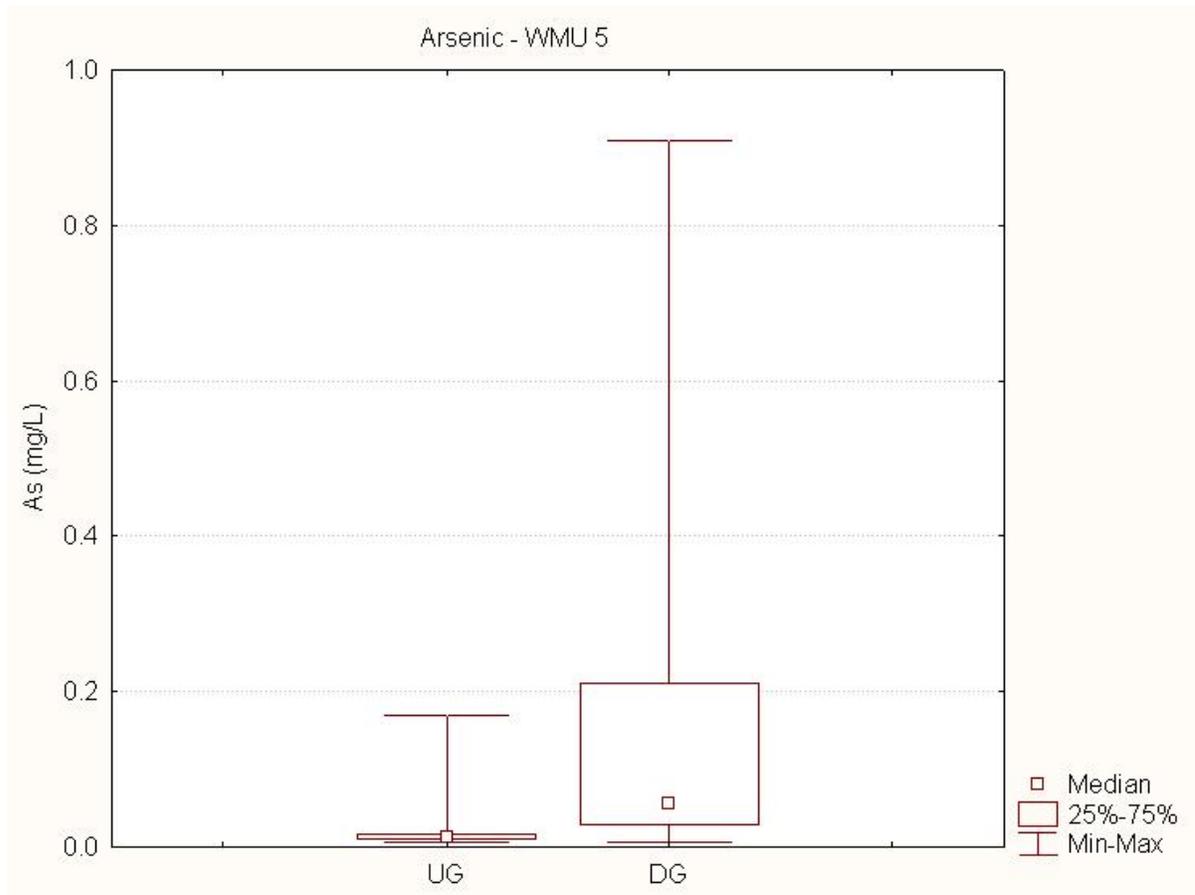
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

WMU 5 TEST 1 ARSENIC

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	P
Upgradient	95	0.012	5653.0	1093.0	-13.50	<0.0001
Downgradient	293	0.056	69813.0			

Summary: The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

Arsenic

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Sep-91	0.014	0.034	0.068	0.753
Dec-91	0.015	0.033	0.058	0.536
Mar-92	0.013	0.033	0.080	0.541
Jun-92	U	U	0.098	0.909
Sep-92	0.170	0.028	0.031	0.574
Dec-92	0.022	0.025	0.072	0.593
Mar-93	0.021	0.043	0.073	0.470
Jun-93	0.020	0.042	0.052	0.449
Sep-93	0.021	0.046	0.032	0.056
Dec-93	0.010	0.028	0.058	0.481
Mar-94	0.013	0.033	0.064	0.474
Jun-94	0.020	0.033	0.019	0.007
Sep-94	0.018	0.041	0.039	0.408
Dec-94	0.020	0.043	0.061	0.499
Mar-95	0.021	0.044	0.037	0.485
Jun-95	0.019	0.050	0.023	0.644
Sep-95	0.020	0.047	0.034	0.385
Dec-95	0.029	0.065	0.041	0.505
Mar-96	0.018	0.038	0.037	0.408
Jun-96	0.017	0.033	0.037	0.414
Sep-96	0.021	0.049	0.054	0.530
Dec-96	0.017	0.046	0.055	0.510
Mar-97	0.016	0.045	0.045	0.430
Jun-97	0.014	0.047	0.044	0.430
Sep-97	0.014	0.028	0.040	0.400
Dec-97	U	0.038	0.044	0.410
Feb-98	0.022	0.044	0.047	0.400
May-98	0.022	0.043	0.045	0.380
Aug-98	0.019	0.034	0.042	0.380
Nov-98	0.015	0.030	0.040	0.400
Feb-99	0.019	0.029	0.041	0.350
May-99	0.022	0.032	0.040	0.360
Aug-99	0.0325	0.0307	0.0437	0.390
Nov-99	0.0206	0.0258	0.0399	0.366
Mar-00	0.0197	0.0217	0.045	0.35
May-00	0.0137	0.0184	0.0448	0.333
Aug-00	0.0185	0.0224	0.0479	0.34
Nov-00	0.0141	0.0209	0.0495	0.332
Mar-01	0.0168	0.0187	0.0493	0.303
May-01	0.0148	0.0185	0.0503	0.305
Aug-01	0.0136	0.0171	0.0503	0.286
Nov-01	0.0166	0.0187	0.0614	0.314
Mar-02	0.0125	0.0225	0.0583	0.302
May-02	0.0137	0.0236	0.0606	0.292
Jul-02	0.0134	0.0225	0.0543	0.266
Nov-02	0.0126	0.0234	0.0603	0.298
Mar-03	0.0123	0.0258	0.0612	0.291
May-03	0.0126	0.0259	0.0608	0.306
Aug-03	0.0099	0.0218	0.0576	0.266

TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

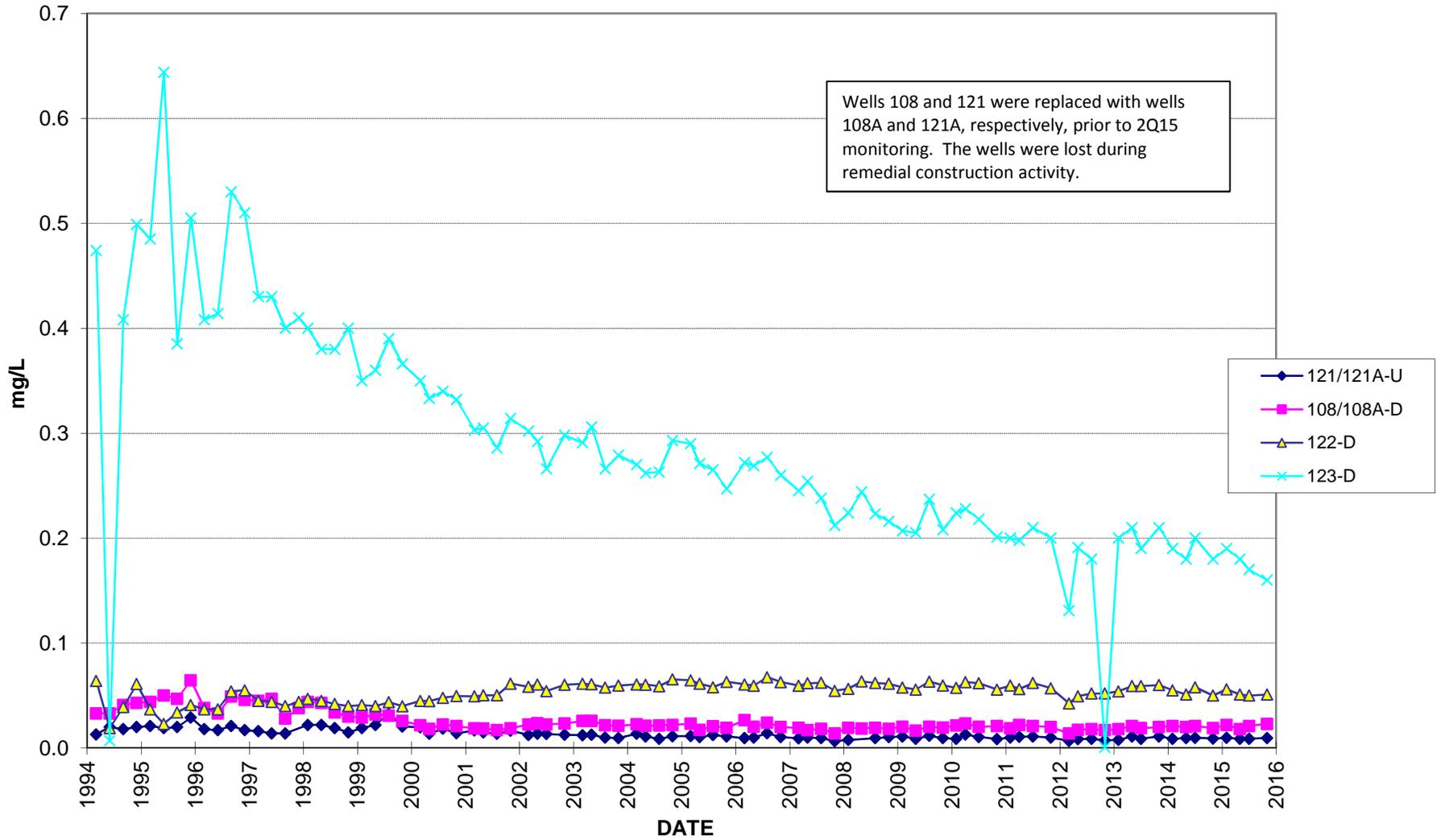
Arsenic

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Nov-03	0.0096	0.0212	0.0595	0.279
Mar-04	0.0136	0.0227	0.0607	0.27
May-04	0.011	0.0212	0.0604	0.262
Aug-04	0.0087	0.0215	0.0589	0.263
Nov-04	0.0113	0.022	0.0654	0.293
Mar-05	0.0114	0.0231	0.0646	0.29
May-05	0.0104	0.0174	0.0612	0.271
Aug-05	0.0124	0.0208	0.058	0.265
Nov-05	0.011	0.0194	0.0631	0.247
Feb-06	0.0094	0.0266	0.0606	0.272
May-06	0.0101	0.0202	0.0594	0.269
Aug-06	0.0141	0.0242	0.0675	0.277
Nov-06	0.0104	0.02	0.0628	0.26
Feb-07	0.0093	0.0192	0.0594	0.245
May-07	0.0101	0.0172	0.0617	0.254
Aug-07	0.0095	0.0183	0.0622	0.238
Nov-07	0.0066	0.014	0.0545	0.212
Feb-08	0.0077	0.0193	0.0565	0.224
May-08	U	0.0186	0.0635	0.244
Aug-08	0.0094	0.0193	0.062	0.223
Nov-08	0.0104	0.0184	0.0612	0.216
Feb-09	0.0111	0.0202	0.0577	0.207
May-09	0.0089	0.0167	0.0557	0.205
Aug-09	0.0116	0.0203	0.0633	0.237
Nov-09	0.0095	0.0195	0.0597	0.208
Feb-10	0.0088	0.0215	0.0574	0.224
Apr-10	0.0129	0.0234	0.0628	0.228
Jul-10	0.0105	0.0202	0.0617	0.218
Nov-10	0.0086	0.0209	0.0558	0.201
Feb-11	0.0099	0.0188	0.0595	0.200
Apr-11	0.0107	0.0220	0.0562	0.198
Jul-11	0.0110	0.0210	0.0620	0.210
Nov-11	0.0100	0.0200	0.0570	0.200
Feb-12	0.0069	0.0138	0.0426	0.131
May-12	0.0085	0.0174	0.0494	0.191
Aug-12	0.0087	0.0180	0.0520	0.180
Nov-12	0.0074	0.0170	0.0520	0.200
Feb-13	0.0078	0.0180	0.0540	0.200
May-13	0.0110	0.0210	0.0590	0.210
Jul-13	0.0089	0.0190	0.0590	0.190
Nov-13	0.0110	0.0200	0.0600	0.210
Feb-14	0.0088	0.0210	0.0550	0.190
May-14	0.0095	0.0200	0.0510	0.180
Jul-14	0.0098	0.0210	0.0580	0.200
Nov-14	0.0091	0.0190	0.0500	0.180
Feb-15	<i>0.0097</i>	<i>0.0220</i>	<i>0.0560</i>	<i>0.190</i>
May-15	<i>0.0089</i>	<i>0.0180</i>	<i>0.0510</i>	<i>0.180</i>
Jul-15	<i>0.0088</i>	<i>0.0210</i>	<i>0.0500</i>	<i>0.170</i>

TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

Arsenic				
<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Nov-15	<i>0.0096</i>	<i>0.0230</i>	<i>0.0510</i>	<i>0.160</i>
Test 2 Results				
	Well 121	Well 108	Well 122	Well 123
Pre-2015 Mean	0.0155	0.0266	0.0540	0.3200
2015 Mean	<i>0.0093</i>	0.0210	0.0520	0.1750
1991-2015 Statistical Summary				
Mean	0.015	0.026	0.054	0.314
Median	0.012	0.022	0.056	0.275
Standard Deviation	0.017	0.010	0.011	0.142
Kurtosis	78.38	1.45	2.29	2.91
Skewness	8.482	1.397	-0.070	1.299
Minimum	0.007	0.014	0.019	0.007
Maximum	0.170	0.065	0.098	0.909
Count	95	97	98	98
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.</p>				

Arsenic in Groundwater (WMU 5)

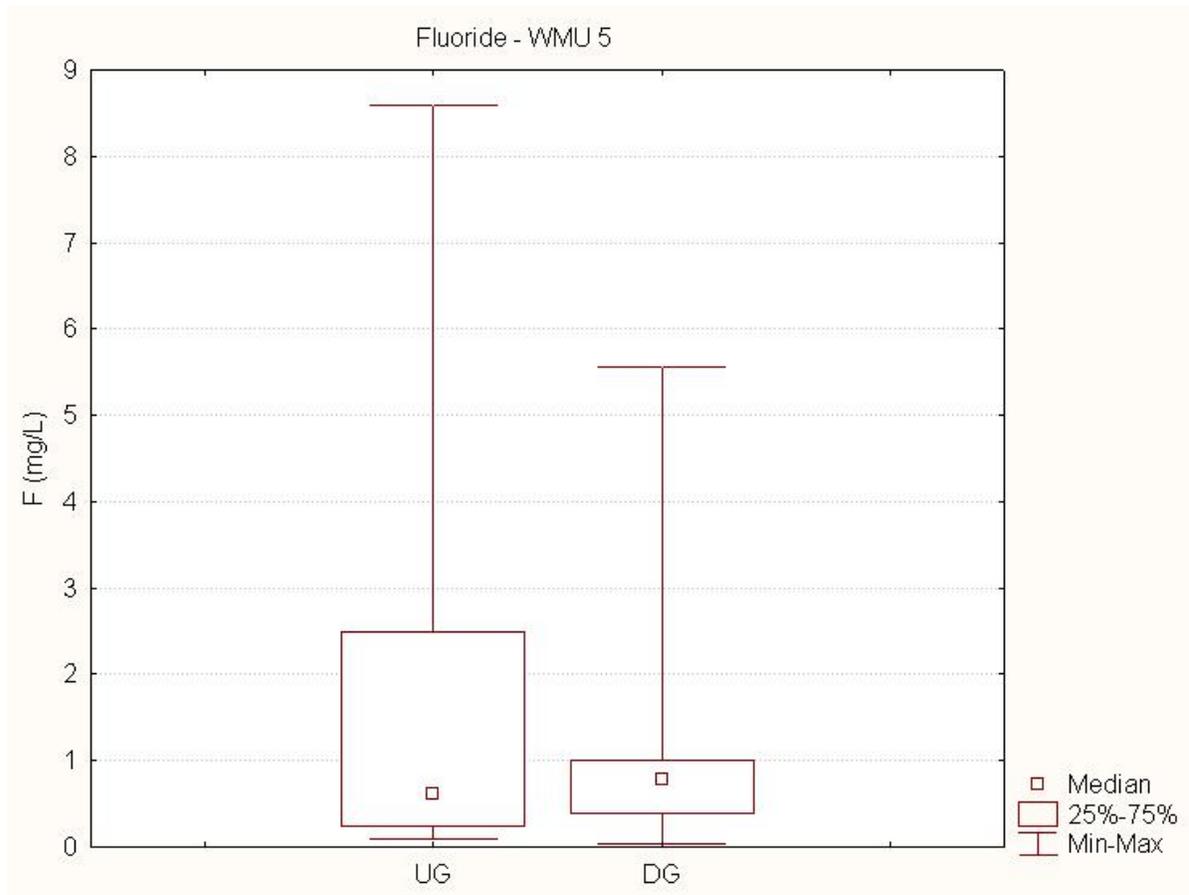


WMU 5 TEST 1 FLUORIDE

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	96	0.62	18140.0	10900.0	1.53	0.13
Downgradient	254	0.78	43285.0			

Summary: The median fluoride concentration of downgradient (DG) wells is not statistically different from the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

Fluoride

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Sep-91	1.40	3.00	0.20	0.70
Dec-91	1.51	3.25	0.20	0.79
Mar-92	1.02	3.12	0.20	0.97
Jun-92	1.23	2.53	U	0.62
Sep-92	1.21	2.66	U	0.61
Dec-92	1.40	2.50	U	0.70
Mar-93	2.00	2.00	U	0.70
Jun-93	4.50	1.10	1.10	0.70
Sep-93	4.10	2.00	0.20	0.60
Dec-93	2.40	3.30	U	0.90
Mar-94	3.00	2.40	U	0.80
Jun-94	6.10	2.42	2.20	0.90
Sep-94	4.70	3.00	0.50	1.10
Dec-94	3.96	2.70	U	0.80
Mar-95	7.30	1.80	0.50	0.81
Jun-95	8.60	0.70	3.10	0.80
Sep-95	4.58	0.65	1.27	0.93
Dec-95	2.60	0.68	1.07	0.65
Mar-96	3.22	5.56	U	U
Jun-96	3.84	5.26	1.56	0.72
Sep-96	3.00	U	U	U
Dec-96	3.45	1.52	0.15	0.81
Mar-97	3.70	1.21	0.27	0.54
Jun-97	3.42	1.44	0.54	0.56
Sep-97	1.68	1.01	U	0.52
Dec-97	1.36	0.57	U	0.57
Feb-98	3.13	0.47	U	0.57
May-98	2.10	0.83	U	0.58
Aug-98	2.15	0.87	U	0.55
Nov-98	1.62	0.68	U	0.63
Feb-99	1.81	0.76	U	0.67
May-99	2.00	0.87	U	1.40
Aug-99	6.70	1.70	U	0.69
Nov-99	U	U	U	U
Mar-00	4.8	3.2	U	0.69
May-00	4.6	2.4	U	0.36
Aug-00	4.9	2.3	0.11	0.78
Nov-00	4.1	2	U	0.78
Mar-01	3	2.3	U	0.57
May-01	2.6	1.9	0.06	0.67
Aug-01	1.4	0.89	U	0.47
Nov-01	1.4	1.6	0.07	0.77
Mar-02	0.99	0.94	0.13	0.83
May-02	1.1	0.91	U	0.82
Jul-02	1	1.1	0.11	0.81
Nov-02	0.83	0.96	U	0.95
Mar-03	0.68	0.94	U	1
May-03	0.67	1	0.11	0.79
Aug-03	0.58	1.1	U	0.99

TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

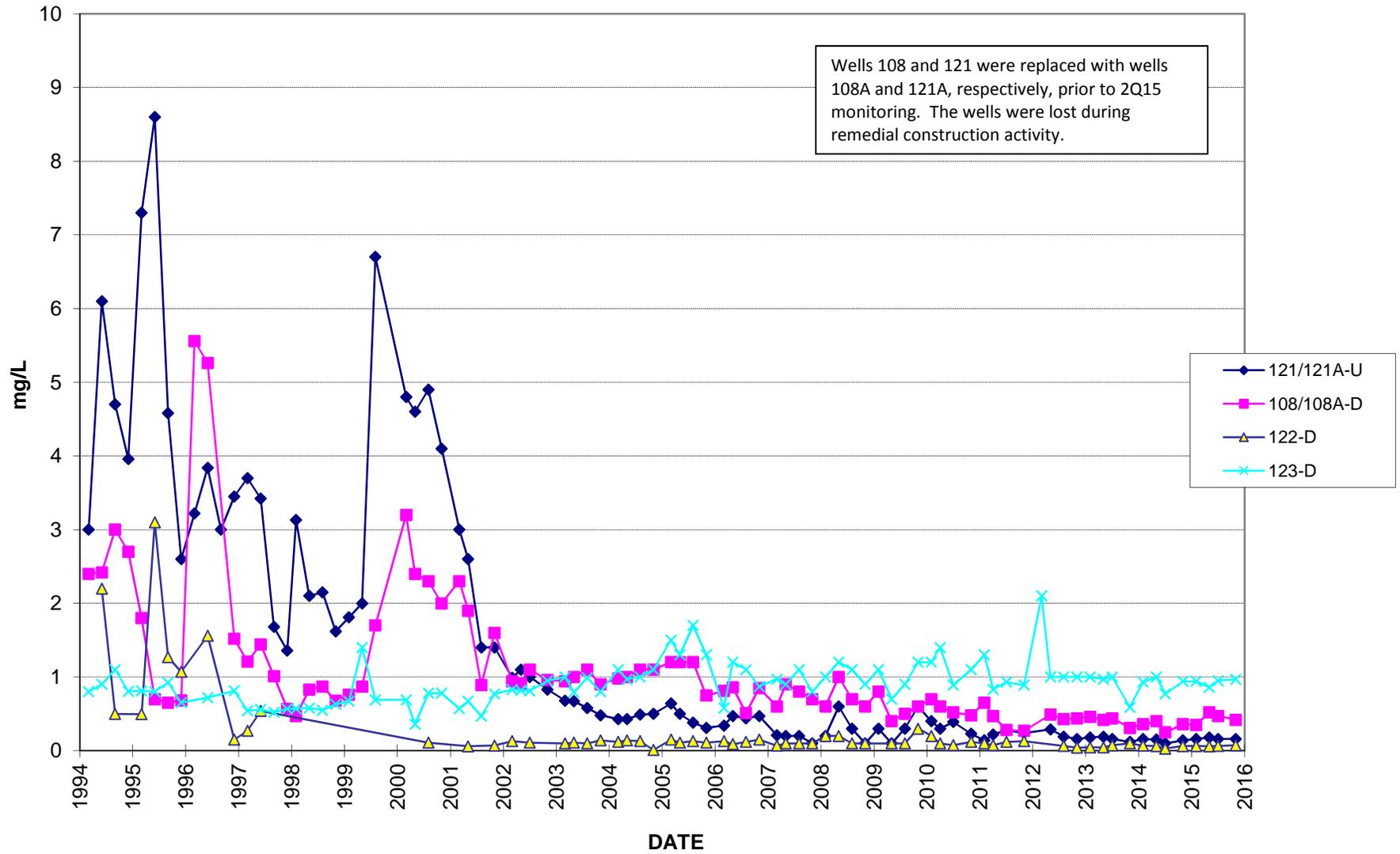
Fluoride

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Nov-03	0.48	0.9	0.14	0.8
Mar-04	0.43	0.98	0.12	1.1
May-04	0.43	1	0.14	0.97
Aug-04	0.49	1.1	0.13	1
Nov-04	0.5	1.1	U	1.1
Mar-05	0.64	1.2	0.15	1.5
May-05	0.5	1.2	0.11	1.3
Aug-05	0.38	1.2	0.13	1.7
Nov-05	0.31	0.75	0.11	1.3
Feb-06	0.34	0.81	0.13	0.58
May-06	0.47	0.86	0.09	1.2
Aug-06	0.44	0.51	0.12	1.1
Nov-06	0.47	0.85	0.15	0.87
Feb-07	0.21	0.6	0.069	0.97
May-07	0.2	0.9	0.1	0.9
Aug-07	0.2	0.8	0.1	1.1
Nov-07	0.1	0.7	0.1	0.8
Feb-08	0.2	0.6	0.2	1
May-08	0.6	1	0.2	1.2
Aug-08	0.3	0.7	0.1	1.1
Nov-08	0.1	0.6	0.1	0.9
Feb-09	0.3	0.8	U	1.1
May-09	0.1	0.4	0.1	0.7
Aug-09	0.3	0.5	0.1	0.9
Nov-09	0.6	0.6	0.3	1.2
Feb-10	0.4	0.7	0.2	1.2
Apr-10	0.3	0.6	0.1	1.4
Jul-10	0.39	0.52	0.075	0.89
Nov-10	0.23	0.48	0.12	1.1
Feb-11	0.14	0.65	0.10	1.30
Apr-11	0.22	0.47	0.08	0.83
Jul-11	0.28	0.28	0.12	0.93
Nov-11	0.24	0.27	0.13	0.89
Feb-12	U	U	U	2.10
May-12	0.29	0.49	U	1.00
Aug-12	0.19	0.43	0.07	1.00
Nov-12	0.16	0.44	0.04	1.00
Feb-13	0.18	0.46	0.05	1.00
May-13	0.19	0.42	0.04	0.97
Jul-13	0.16	0.44	0.07	1.00
Nov-13	0.12	0.31	U	0.59
Feb-14	0.16	0.36	0.0690	0.930
May-14	0.15	0.40	0.0630	1.000
Jul-14	0.10	0.25	U	0.770
Nov-14	0.14	0.36	0.0630	0.940
Feb-15	0.16	0.35	0.0630	0.940
May-15	0.18	0.52	0.0600	0.980
Jul-15	0.16	0.47	0.0660	0.950
Nov-15	0.16	0.42	0.0740	0.930

TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

Fluoride				
<u>Date</u>	<u>Upgradient Well</u> Well 121	<u>Well 108</u>	<u>Downgradient Wells</u>	
			<u>Well 122</u>	<u>Well 123</u>
Test 2 Results				
	Well 121	Well 108	Well 122	Well 123
Pre-2015 Mean	1.6366	1.2648	0.3004	0.8946
2015 Mean	0.1650	0.4400	0.0658	0.9500
1991-2015 Statistical Summary				
Mean	1.575	1.230	0.286	0.897
Median	0.620	0.870	0.115	0.900
Standard Deviation	1.842	1.019	0.525	0.270
Kurtosis	2.30	4.63	15.44	3.73
Skewness	1.603	1.970	3.752	1.276
Minimum	0.100	0.250	0.042	0.360
Maximum	8.600	5.560	3.100	2.100
Count	96	95	64	95
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.</p>				

Fluoride in Groundwater (WMU 5)

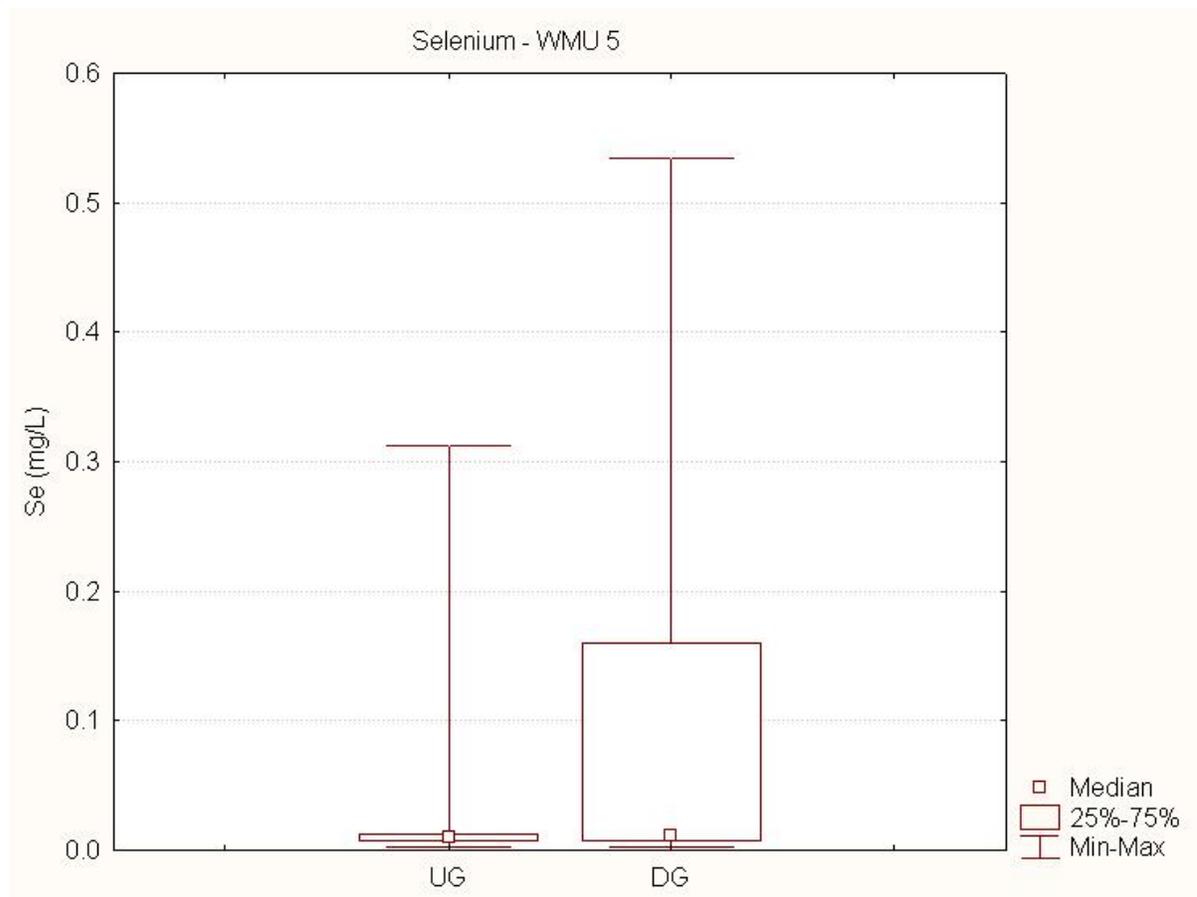


WMU 5 TEST 1 SELENIUM

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	89	0.010	12864.5	8859.5	-2.76	0.006
Downgradient	248	0.011	44088.5			

Summary: The median selenium concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

Selenium

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 121/121A</u>	<u>Well 108/108A</u>	<u>Well 122</u>	<u>Well 123</u>
Sep-91	0.006	0.004	0.002	0.332
Dec-91	0.002	0.002	0.002	0.311
Mar-92	0.006	0.002	0.004	0.277
Jun-92	0.013	0.008	0.006	0.534
Sep-92	U	0.002	U	0.200
Dec-92	0.312	0.006	0.002	0.412
Mar-93	0.008	0.005	0.003	0.290
Jun-93	0.007	0.004	0.002	0.277
Sep-93	0.006	0.007	U	0.026
Dec-93	U	U	U	0.291
Mar-94	U	U	U	0.248
Jun-94	U	U	U	U
Sep-94	0.006	U	U	0.224
Dec-94	0.025	0.005	U	0.305
Mar-95	U	U	U	0.209
Jun-95	0.004	U	U	0.258
Sep-95	0.012	0.006	0.007	0.214
Dec-95	0.005	0.004	U	0.225
Mar-96	0.007	U	U	0.186
Jun-96	0.005	U	U	0.213
Sep-96	0.007	0.005	U	0.280
Dec-96	0.007	0.005	U	0.270
Mar-97	0.010	U	U	0.230
Jun-97	0.008	U	U	0.220
Sep-97	0.008	U	U	0.230
Dec-97	0.010	0.005	U	0.220
Feb-98	0.011	0.0059	0.0049	0.24
May-98	0.0098	U	U	0.22
Aug-98	0.012	U	U	0.2
Nov-98	0.0077	0.016	0.0077	0.23
Feb-99	U	U	U	0.2
May-99	U	U	U	0.21
Aug-99	0.0092	0.0056	0.0064	0.224
Nov-99	0.0104	0.0086	0.0061	0.209
Mar-00	U	U	U	0.211
May-00	0.0058	0.0057	U	0.202
Aug-00	0.0091	0.007	U	0.204
Nov-00	0.0047	0.0067	U	0.203
Mar-01	0.0065	0.007	0.0044	0.188
May-01	0.0077	0.0062	0.0045	0.193
Aug-01	0.0058	0.0049	U	0.175
Nov-01	0.0082	0.0056	0.0041	0.196
Mar-02	0.0054	0.0058	0.0061	0.184
May-02	0.0082	0.0073	0.0055	0.181
Jul-02	0.0056	0.0062	0.0053	0.167
Nov-02	0.0073	0.0067	0.008	0.189
Mar-03	U	U	U	0.185
May-03	0.0074	0.0076	0.0101	0.191
Aug-03	0.0072	0.0077	0.0079	0.159

TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

Selenium

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 121/121A</u>	<u>Well 108/108A</u>	<u>Well 122</u>	<u>Well 123</u>
Nov-03	0.0067	0.0065	0.0074	0.179
Mar-04	0.0112	0.0097	0.0126	0.172
May-04	0.0093	0.0074	0.0094	0.162
Aug-04	0.0045	0.0057	0.0059	0.166
Nov-04	0.0101	0.0098	0.0085	0.185
Mar-05	0.0087	0.0067	0.011	0.179
May-05	0.0087	0.0055	0.0081	0.167
Aug-05	0.008	0.0077	0.009	0.162
Nov-05	0.0108	0.0076	0.0076	0.158
Feb-06	0.0111	0.0105	0.0088	0.175
May-06	0.0131	0.0086	0.0107	0.173
Aug-06	0.0148	0.0194	0.0122	0.179
Nov-06	0.0119	0.0108	0.0087	0.17
Feb-07	0.0112	0.0091	0.0105	0.158
May-07	0.0129	0.0109	0.01	0.161
Aug-07	0.014	0.0139	0.0096	0.156
Nov-07	0.0101	0.0095	0.0077	0.138
Feb-08	0.0114	0.0092	0.0097	0.152
May-08	0.0126	0.0087	0.0083	0.141
Aug-08	0.011	0.0111	0.008	0.149
Nov-08	0.0134	0.0138	0.009	0.148
Feb-09	0.0116	0.0087	0.0096	0.139
May-09	0.0122	0.0108	0.0092	0.143
Aug-09	0.0145	0.0136	0.0108	0.162
Nov-09	0.0092	0.0081	0.0074	0.142
Feb-10	0.0141	0.0129	0.0074	0.151
Apr-10	0.0134	0.0088	0.0067	0.157
Jul-10	0.0126	0.0141	0.0089	0.150
Nov-10	0.0098	0.0124	0.0091	0.145
Feb-11	0.0132	0.0107	0.0086	0.145
Apr-11	0.0124	0.0113	0.0057	0.140
Jul-11	0.0150	0.0140	0.0110	0.150
Nov-11	0.0150	0.0140	0.0096	0.150
Feb-12	0.0070	0.0056	0.0044	0.065
May-12	0.0098	0.0091	0.0060	0.110
Aug-12	0.0130	0.0120	0.0073	0.120
Nov-12	0.0150	0.0120	0.0074	0.140
Feb-13	0.0130	0.0110	0.0090	0.140
May-13	0.0140	0.0130	0.0093	0.150
Jul-13	0.0130	0.0130	0.0090	0.140
Nov-13	0.0140	0.0120	0.0084	0.150
Feb-14	0.0120	0.0180	0.0085	0.130
May-14	0.0140	0.0110	0.0088	0.130
Jul-14	0.0150	0.0140	0.0098	0.160
Nov-14	0.0120	0.0110	0.0079	0.140
Feb-15	<i>0.0150</i>	<i>0.0120</i>	<i>0.0095</i>	<i>0.150</i>
May-15	<i>0.0140</i>	<i>0.0150</i>	<i>0.0094</i>	<i>0.160</i>
Jul-15	<i>0.0140</i>	<i>0.0140</i>	<i>0.0080</i>	<i>0.140</i>

TEST 2
STATISTICS FOR SLAG PIT SUMP (WMU 5)

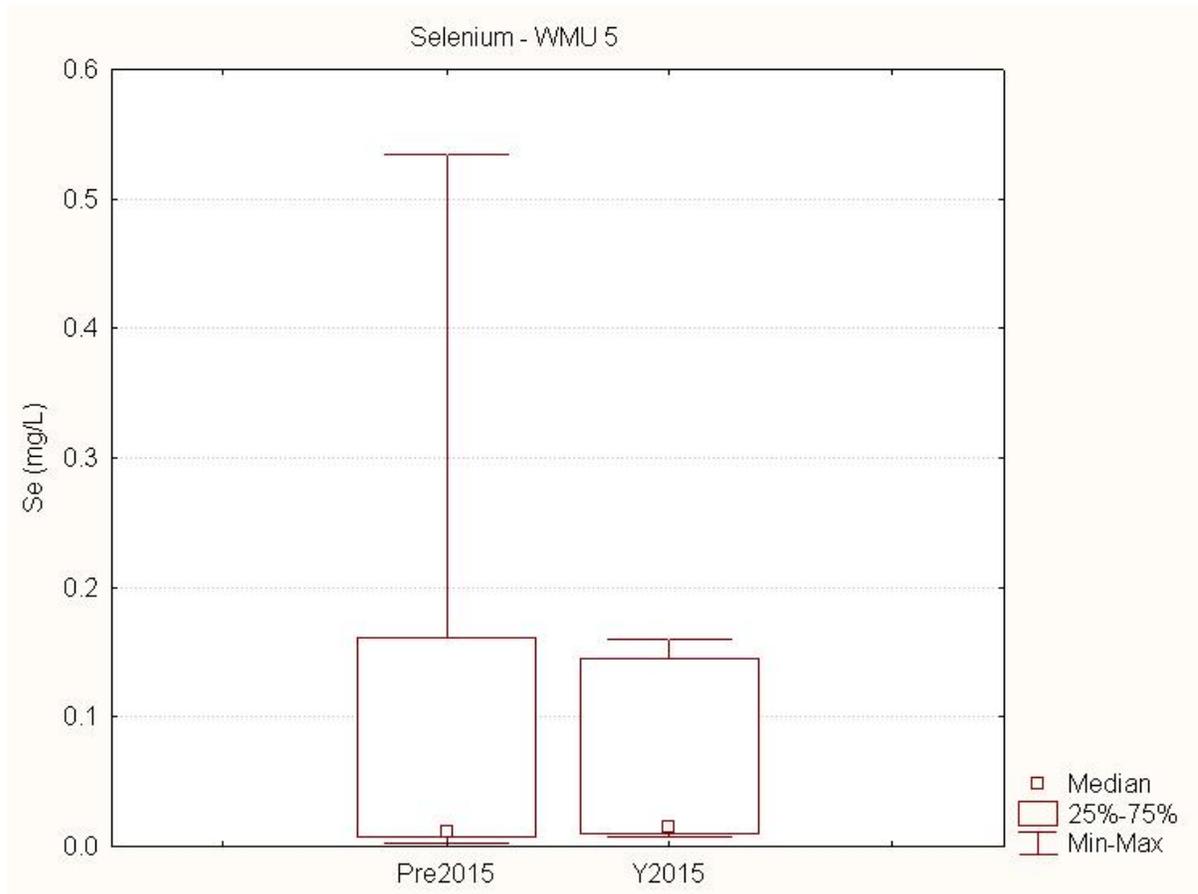
Selenium				
<u>Date</u>	<u>Upgradient Well</u> Well 121/121A	<u>Well 108/108A</u>	<u>Downgradient Wells</u>	
<u>Nov-15</u>	<i>0.0150</i>	<i>0.0150</i>	<u>Well 122</u> <i>0.0091</i>	<u>Well 123</u> <i>0.160</i>
Test 2 Results				
	Well 121/121A	Well 108/108A	Well 122	Well 123
Pre-2015 Mean	0.0136	0.0087	0.0076	0.1916
2015 Mean	0.0145	0.0140	0.0090	0.1525
1991-2015 Statistical Summary				
Mean	0.014	0.009	0.008	0.190
Median	0.010	0.009	0.008	0.175
Standard Deviation	0.032	0.004	0.002	0.066
Kurtosis	86.70	-0.31	0.14	8.18
Skewness	9.253	0.406	-0.662	2.002
Minimum	0.002	0.002	0.002	0.026
Maximum	0.312	0.019	0.013	0.534
Count	89	81	70	97
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.</p>				

WMU 5 TEST 3 SELENIUM

Mann-Whitney U Test Results

Sample Date	N	Median	Rank Sum	U	Z	p
Pre-2015	236	0.0110	29214.0	1248.0	-0.69	0.49
Year 2015	12	0.0145	1662.0			

Summary: For downgradient wells, the median of pre-2015 selenium concentrations is not significantly different from the median of Year 2015 selenium concentrations.



Selenium in Groundwater (WMU 5)



POND 8S

Waste Management Unit 7

Note:

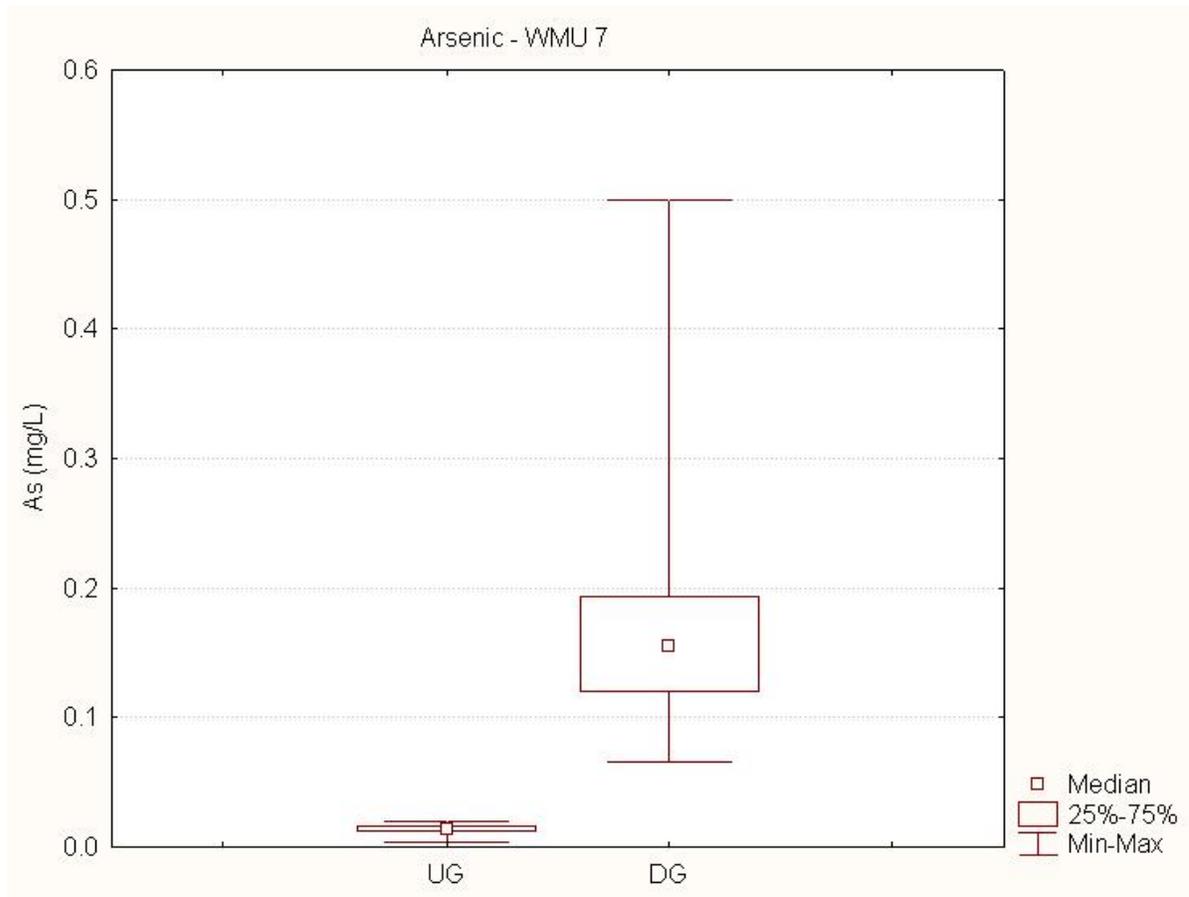
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

WMU 7 TEST 1 ARSENIC

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	155	0.014	12090.0	0.00	-16.87	<0.0001
Downgradient	246	0.155	68511.0			

Summary: The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 8S (WMU 7)

Date	Arsenic		Downgradient Wells		
	Upgradient Wells		Well 155	Well 156	Well 157
	Well 158	Well 183			
Sep-91	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-91	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-92	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-92	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-92	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-92	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-93	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-93	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-93	0.015	N.S.	N.S.	N.S.	N.S.
Dec-93	0.013	N.S.	N.S.	N.S.	N.S.
Mar-94	0.017	N.S.	N.S.	N.S.	N.S.
Jun-94	0.014	N.S.	N.S.	N.S.	N.S.
Sep-94	U	N.S.	N.S.	N.S.	N.S.
Dec-94	0.009	N.S.	N.S.	N.S.	N.S.
Mar-95	0.012	N.S.	N.S.	N.S.	N.S.
Jun-95	0.010	N.S.	N.S.	N.S.	N.S.
Sep-95	0.014	N.S.	0.284	0.499	0.193
Dec-95	0.019	N.S.	0.271	0.481	0.199
Mar-96	0.009	N.S.	0.266	0.387	0.167
Jun-96	0.011	N.S.	0.218	0.243	0.174
Sep-96	0.016	N.S.	0.410	0.400	0.260
Dec-96	0.016	N.S.	0.420	0.330	0.230
Mar-97	0.014	N.S.	0.390	0.300	0.200
Jun-97	0.013	N.S.	0.390	0.270	0.240
Sep-97	0.013	N.S.	0.320	0.200	0.180
Dec-97	U	N.S.	0.360	0.180	0.190
Feb-98	0.014	N.S.	0.350	0.210	0.180
May-98	U	N.S.	0.380	0.190	0.200
Aug-98	0.016	N.S.	0.390	0.210	0.240
Nov-98	0.012	0.009	0.390	0.190	0.190
Feb-99	0.013	0.011	0.31	0.18	0.17
May-99	0.013	0.016	0.31	0.2	0.18
Aug-99	0.0154	0.0168	0.284	0.196	0.203
Nov-99	0.0161	0.0149	0.327	0.195	0.173
Mar-00	0.0165	0.0204	0.283	0.201	0.165
May-00	0.0157	0.0183	0.25	0.203	0.162
Aug-00	0.013	0.0162	0.196	0.159	0.193
Nov-00	0.0191	0.0178	0.26	0.166	0.179
Mar-01	0.012	0.0143	0.241	0.155	0.163
May-01	0.0121	0.0143	0.213	0.163	0.15
Aug-01	0.0118	0.016	0.191	0.14	0.169
Nov-01	0.015	0.0181	0.186	0.154	0.173
Mar-02	0.014	0.014	0.202	0.149	0.157
May-02	0.013	0.0154	0.204	0.158	0.167
Aug-02	0.013	0.0153	0.206	0.141	0.169
Nov-02	0.0106	0.0157	0.191	0.149	0.139
Mar-03	0.0128	0.0154	0.221	0.155	0.119
May-03	0.0122	0.0169	0.208	0.163	0.122
Aug-03	0.0113	0.0167	0.185	0.163	0.13

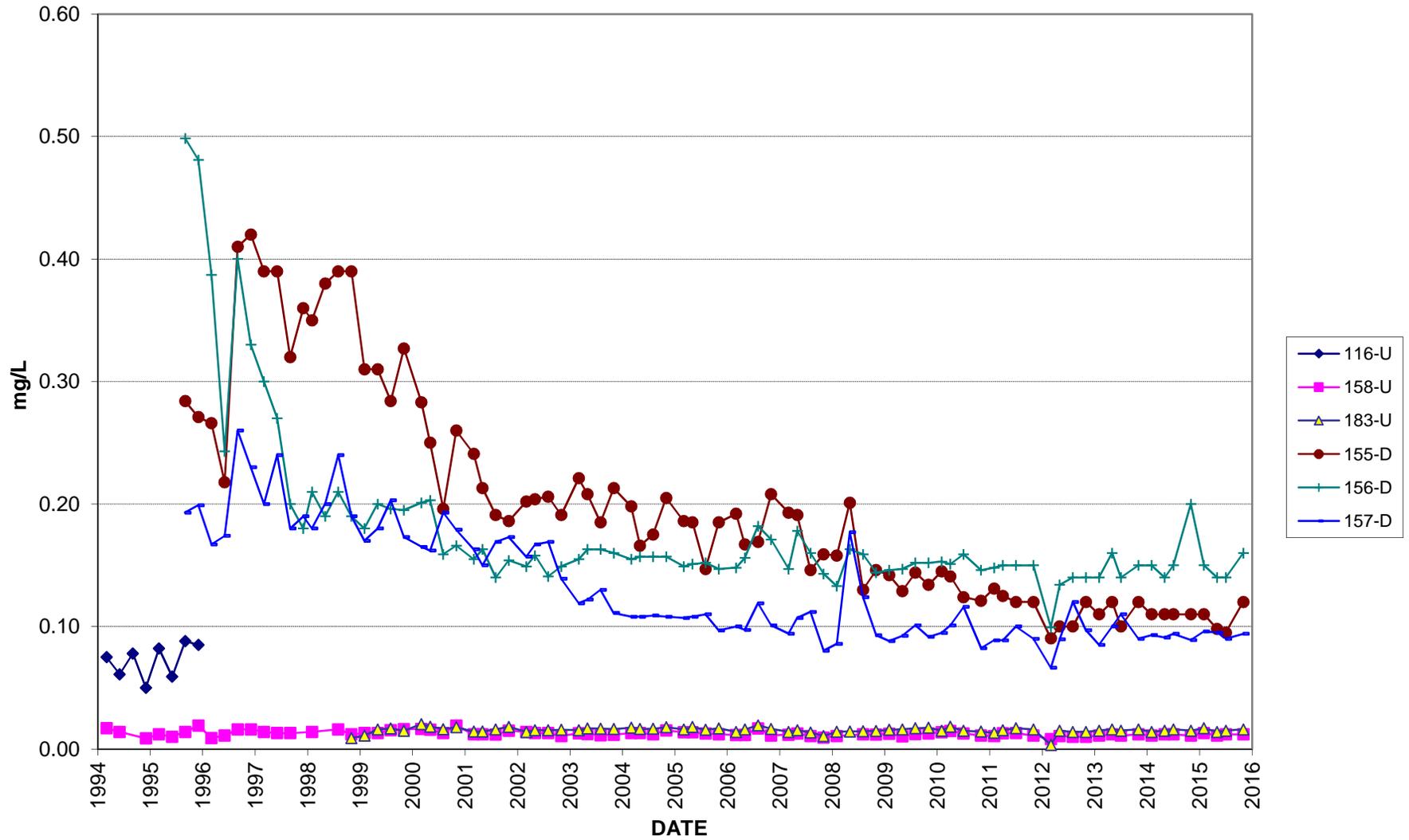
TEST 2
STATISTICS FOR POND 8S (WMU 7)

Arsenic					
<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Nov-03	0.0117	0.0163	0.213	0.16	0.111
Mar-04	0.013	0.0174	0.198	0.155	0.108
May-04	0.013	0.0163	0.166	0.157	0.108
Aug-04	0.012	0.0166	0.175	0.157	0.109
Nov-04	0.0152	0.0178	0.205	0.157	0.108
Mar-05	0.0137	0.016	0.186	0.149	0.107
May-05	0.0137	0.018	0.185	0.151	0.108
Aug-05	0.0126	0.0157	0.147	0.152	0.11
Nov-05	0.0121	0.0169	0.185	0.147	0.0968
Feb-06	0.0114	0.014	0.192	0.148	0.1
May-06	0.0114	0.0159	0.167	0.156	0.0973
Aug-06	0.0169	0.0193	0.169	0.182	0.119
Nov-06	0.0111	0.0164	0.208	0.171	0.101
Feb-07	0.0117	0.014	0.193	0.147	0.0941
May-07	0.0126	0.0153	0.191	0.178	0.107
Aug-07	0.0106	0.0135	0.146	0.16	0.112
Nov-07	0.0094	0.0106	0.159	0.143	0.0803
Feb-08	0.0107	0.0141	0.158	0.133	0.0859
May-08	U	0.0144	0.201	0.163	0.177
Aug-08	0.012	0.0145	0.13	0.159	0.124
Nov-08	0.0118	0.0148	0.146	0.144	0.0929
Feb-09	0.0124	0.0157	0.142	0.146	0.0881
May-09	0.0103	0.016	0.129	0.147	0.0924
Aug-09	0.0123	0.017	0.144	0.152	0.101
Nov-09	0.0126	0.0174	0.134	0.152	0.0916
Feb-10	0.0138	0.015	0.145	0.153	0.0948
Apr-10	0.0147	0.0182	0.141	0.151	0.101
Jul-10	0.0127	0.0149	0.124	0.159	0.116
Nov-10	0.011	0.0143	0.121	0.146	0.0823
Feb-11	0.0107	0.0132	0.131	0.148	0.0888
Apr-11	0.0128	0.0154	0.125	0.15	0.0888
Jul-11	0.013	0.017	0.12	0.15	0.1
Nov-11	0.011	0.016	0.12	0.15	0.09
Mar-12	0.00815	0.00344	0.0903	0.0993	0.0663
May-12	0.0107	0.0149	0.1	0.134	0.0896
Aug-12	0.01	0.014	0.1	0.14	0.12
Nov-12	0.01	0.014	0.12	0.14	0.097
Feb-13	0.011	0.015	0.11	0.14	0.085
May-13	0.012	0.016	0.12	0.16	0.1
Jul-13	0.011	0.015	0.1	0.14	0.11
Nov-13	0.012	0.016	0.12	0.15	0.09
Feb-14	0.011	0.014	0.11	0.15	0.093
May-14	0.012	0.015	0.11	0.14	0.091
Jul-14	0.012	0.016	0.11	0.15	0.094
Nov-14	0.011	0.015	0.11	0.20	0.089
Feb-15	<i>0.013</i>	<i>0.017</i>	<i>0.11</i>	<i>0.15</i>	<i>0.096</i>
May-15	<i>0.011</i>	<i>0.014</i>	<i>0.098</i>	<i>0.14</i>	<i>0.095</i>
Jul-15	<i>0.012</i>	<i>0.015</i>	<i>0.095</i>	<i>0.14</i>	<i>0.090</i>

TEST 2
STATISTICS FOR POND 8S (WMU 7)

Arsenic					
<u>Date</u>	Upgradient Wells		Downgradient Wells		
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Nov-15	<i>0.012</i>	<i>0.016</i>	<i>0.12</i>	<i>0.16</i>	<i>0.094</i>
Test 2 Results					
	Well 158	Well 183	Well 155	Well 156	Well 157
Pre-2015 Mean	0.0128	0.0154	0.2090	0.1818	0.1361
2015 Mean	0.0115	0.0150	0.1100	0.1600	0.0918
1991-2015 Statistical Summary					
Mean	0.0127	0.0154	0.2039	0.1807	0.1339
Median	0.0124	0.0157	0.1885	0.1565	0.1115
Standard Deviation	0.0021	0.0024	0.0877	0.0713	0.0462
Kurtosis	0.8029	9.4198	-0.0023	9.5771	-0.4338
Skewness	0.7490	-2.1545	0.9554	3.0309	0.7621
Minimum	0.0082	0.0034	0.0903	0.0993	0.0663
Maximum	0.0191	0.0204	0.4200	0.4990	0.2600
Count	82	65	78	78	78
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.					
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.					
All concentrations in mg/l.					

Arsenic in Groundwater (WMU 7)

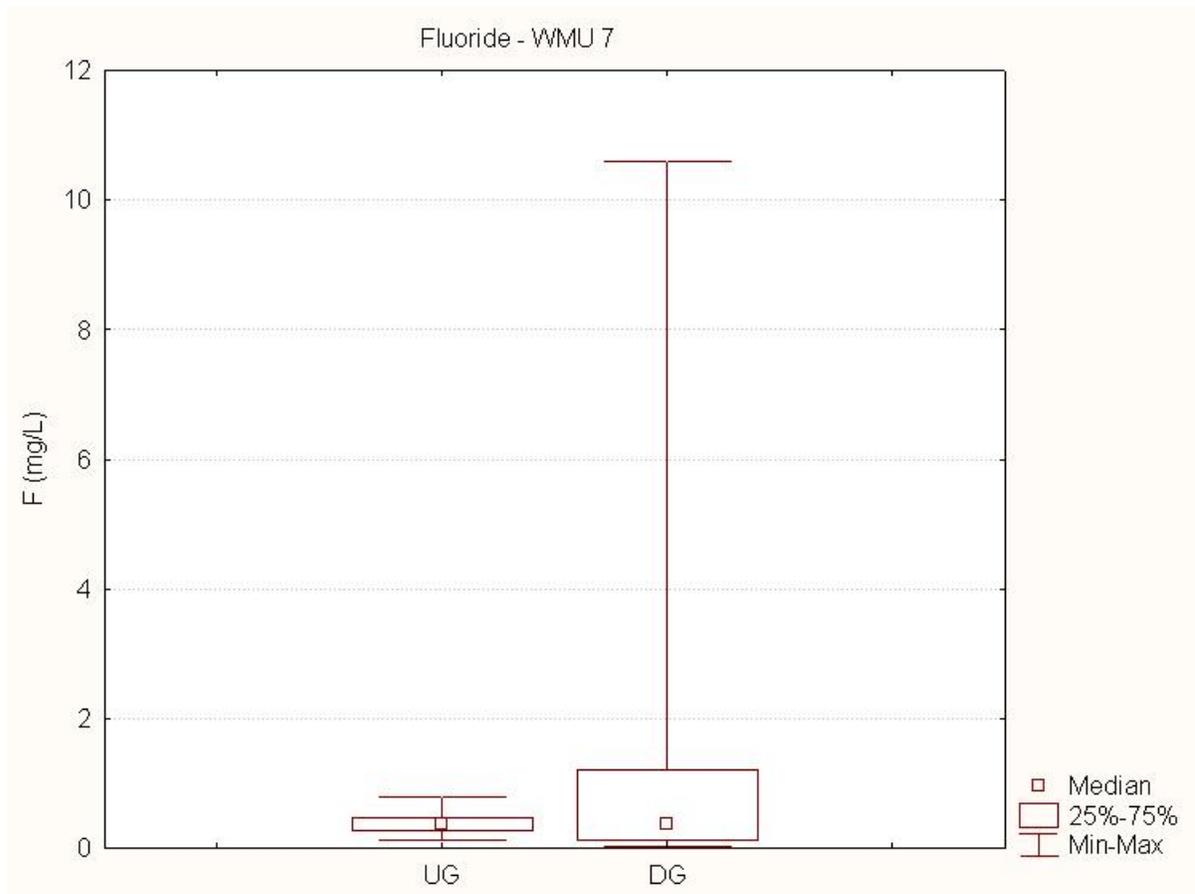


WMU 7 TEST 1 FLUORIDE

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	150	0.37	20327.5	9002.5	-0.11	0.91
Downgradient	121	0.36	16528.5			

Summary: The median fluoride concentration of downgradient (DG) wells is not significantly different from the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 8S (WMU 7)

<u>Date</u>	Fluoride				
	Upgradient Wells			Downgradient Wells	
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Sep-91	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-91	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-92	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-92	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-92	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-92	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-93	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-93	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-93	0.500	N.S.	N.S.	N.S.	N.S.
Dec-93	0.500	N.S.	N.S.	N.S.	N.S.
Mar-94	0.500	N.S.	N.S.	N.S.	N.S.
Jun-94	0.500	N.S.	N.S.	N.S.	N.S.
Sep-94	0.600	N.S.	N.S.	N.S.	N.S.
Dec-94	0.300	N.S.	N.S.	N.S.	N.S.
Mar-95	0.492	N.S.	N.S.	N.S.	N.S.
Jun-95	0.450	N.S.	N.S.	N.S.	N.S.
Sep-95	0.642	N.S.	U	U	8.280
Dec-95	U	N.S.	U	U	7.240
Mar-96	0.518	N.S.	U	U	8.760
Jun-96	0.554	N.S.	0.129	U	9.960
Sep-96	U	N.S.	U	U	6.700
Dec-96	U	N.S.	U	0.160	10.600
Mar-97	0.390	N.S.	U	0.180	9.200
Jun-97	0.380	N.S.	U	0.460	10.100
Sep-97	0.360	N.S.	U	U	8.500
Dec-97	0.340	N.S.	U	0.370	8.150
Feb-98	0.360	N.S.	U	0.120	7.900
May-98	0.360	N.S.	U	0.150	7.900
Aug-98	0.360	N.S.	U	0.140	7.200
Nov-98	0.390	0.50	U	0.130	6.200
Feb-99	0.41	0.57	0.12	0.16	5.07
May-99	0.37	0.77	U	0.16	6.8
Aug-99	0.35	0.78	U	0.1	5.5
Nov-99	U	U	U	U	U
Mar-00	0.34	0.49	U	U	3.52
May-00	0.23	0.53	U	0.17	4.6
Aug-00	0.32	0.47	U	0.11	5.3
Nov-00	0.35	0.48	U	U	4.2
Mar-01	0.22	0.53	U	0.12	4.19
May-01	0.29	0.52	U	0.11	4.8
Aug-01	0.17	0.47	U	U	6.1
Nov-01	0.29	0.48	U	U	4.7
Mar-02	0.31	0.6	U	U	4.2
May-02	N.S.	N.S.	N.S.	N.S.	N.S.
Aug-02	0.3	N.S.	N.S.	N.S.	N.S.
Nov-02	0.25	0.42	U	U	2
Mar-03	0.34	0.45	U	0.12	1.3
May-03	0.27	0.54	U	U	1.2
Aug-03	0.33	0.6	U	U	1.6
Nov-03	0.21	0.52	U	U	1.4

TEST 2
STATISTICS FOR POND 8S (WMU 7)

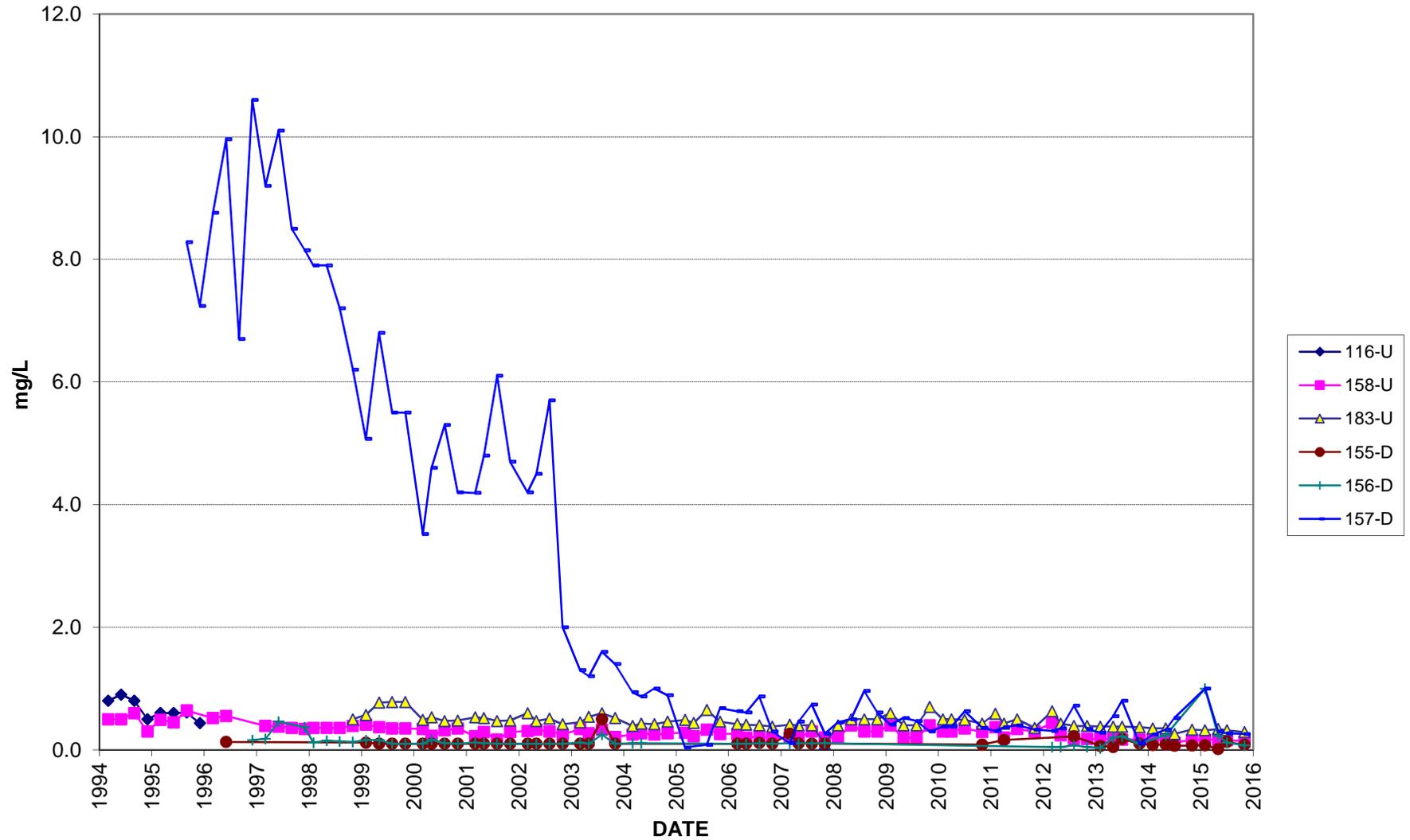
Date	Fluoride				
	Upgradient Wells		Downgradient Wells		
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Mar-04	0.25	0.39	U	0.11	0.94
May-04	0.27	0.43	U	0.11	0.87
Aug-04	0.25	0.42	U	U	1
Nov-04	0.27	0.46	U	U	0.89
Mar-05	0.28	0.49	0.1	U	0.041
May-05	0.22	0.44	N.S.	N.S.	N.S.
Aug-05	0.33	0.65	0.1	U	0.083
Nov-05	0.26	0.46	0.1	U	0.68
Feb-06	0.26	0.42	U	U	0.63
May-06	0.2	0.41	U	U	0.61
Aug-06	0.22	0.4	U	U	0.869
Nov-06	0.19	0.38	0.104	U	0.3
Feb-07	0.2	0.41	U	U	U
May-07	0.2	0.4	U	U	0.46
Aug-07	0.3	0.4	U	U	0.739
Nov-07	0.2	U	0.1	0.1	0.601
Feb-08	0.2	0.4	U	U	0.45
May-08	0.4	0.5	U	U	0.5
Aug-08	0.3	0.5	U	U	0.96
Nov-08	0.3	0.5	U	U	0.61
Feb-09	0.4	0.6	U	U	0.41
May-09	0.2	0.4	U	U	0.52
Aug-09	0.2	0.4	U	U	0.47
Nov-09	0.4	0.7	U	U	0.3
Feb-10	0.3	0.5	U	U	0.38
Apr-10	0.3	0.5	U	U	0.38
Jul-10	0.35	0.49	U	U	0.63
Nov-10	0.29	0.43	0.086	U	0.36
Feb-11	0.37	0.59	U	U	0.31
Apr-11	0.2	0.43	0.16	U	0.37
Jul-11	0.34	0.5	U	U	0.4
Nov-11	0.3	0.36	U	U	0.33
Mar-12	0.44	0.63	U	0.047	0.31
May-12	0.24	0.43	U	0.047	0.35
Aug-12	0.18	0.39	0.22	0.073	0.72
Nov-12	0.18	0.39	U	0.047	0.34
Feb-13	0.18	0.38	0.066	0.028	0.28
May-13	0.18	0.38	U	U	0.55
Jul-13	0.17	0.38	0.18	U	0.8
Nov-13	0.17	0.37	U	U	0.3
Feb-14	0.17	0.35	0.082	U	0.25
May-14	0.17	0.35	0.089	0.24	0.33
Jul-14	0.12	0.26	0.067	U	0.52
Nov-14	0.16	0.33	0.071	U	U
Feb-15	0.16	0.32	0.077	U	U
May-15	0.17	0.34	0.017	U	U
Jul-15	0.16	0.32	0.13	0.12	0.12
Nov-15	0.14	0.29	0.084	0.073	0.26

TEST 2
STATISTICS FOR POND 8S (WMU 7)

Fluoride					
<u>Date</u>	Upgradient Wells		Downgradient Wells		
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Test 2 Results					
	Well 158	Well 183	Well 155	Well 156	Well 157
Pre-2015 Mean	0.3161	0.4812	0.1221	0.1384	2.9408
2015 Mean	0.1550	0.3225	0.0773	0.2400	0.3667
1991-2015 Statistical Summary					
Mean	0.3081	0.4708	0.1109	0.1425	2.8335
Median	0.3000	0.4600	0.1000	0.1200	0.8695
Standard Deviation	0.1115	0.1012	0.0428	0.0957	3.2285
Kurtosis	0.3216	1.4785	1.6964	5.1144	-0.4769
Skewness	0.7782	1.0382	1.4191	2.0655	1.0008
Minimum	0.1200	0.2600	0.0660	0.0280	0.0410
Maximum	0.6420	0.7800	0.2200	0.4600	10.6000
Count	81	61	16	25	72

U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.
All concentrations in mg/l.

Fluoride in Groundwater (WMU 7)

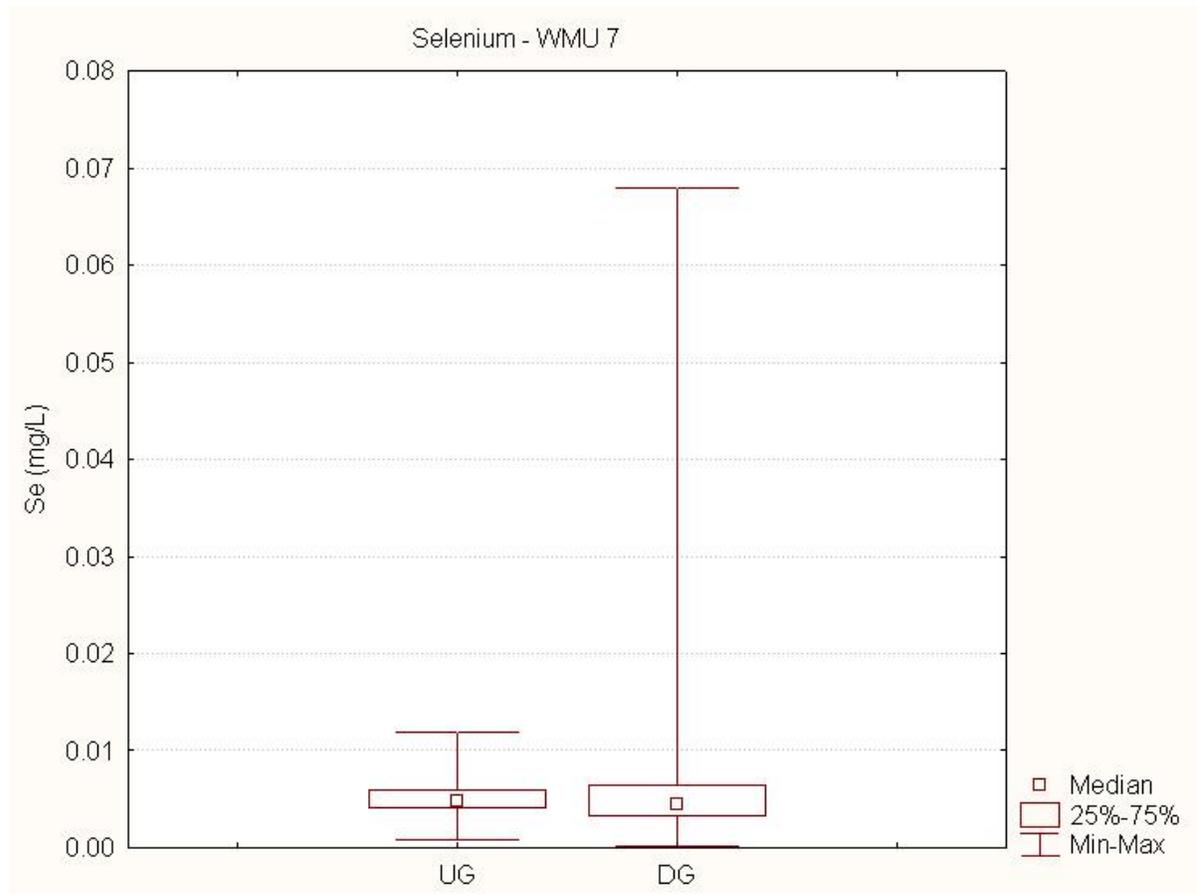


WMU 7 TEST 1 SELENIUM

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	94	0.0049	9750.5	3832.5	1.908	0.057
Downgradient	97	0.0045	8585.5			

Summary: The median selenium concentration of upgradient (UG) wells is not significantly different from the median concentration of downgradient (DG) wells.



TEST 2
STATISTICS FOR POND 8S (WMU 7)

Selenium

Date	Upgradient Wells		Downgradient Wells		
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Sep-91	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-91	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-92	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-92	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-92	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-92	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-93	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-93	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-93	U	N.S.	N.S.	N.S.	N.S.
Dec-93	0.002	N.S.	N.S.	N.S.	N.S.
Mar-94	U	N.S.	N.S.	N.S.	N.S.
Jun-94	U	N.S.	N.S.	N.S.	N.S.
Sep-94	U	N.S.	N.S.	N.S.	N.S.
Dec-94	U	N.S.	N.S.	N.S.	N.S.
Mar-95	U	N.S.	N.S.	N.S.	N.S.
Jun-95	U	N.S.	N.S.	N.S.	N.S.
Sep-95	0.002	N.S.	0.068	0.028	0.005
Dec-95	U	N.S.	U	0.002	U
Mar-96	U	N.S.	U	U	U
Jun-96	U	N.S.	U	U	U
Sep-96	U	N.S.	0.003	0.003	0.004
Dec-96	U	N.S.	U	U	U
Mar-97	U	N.S.	0.006	0.0045	U
Jun-97	U	N.S.	U	U	0.0046
Sep-97	U	N.S.	U	U	U
Dec-97	U	N.S.	U	0.0043	U
Feb-98	0.005	N.S.	0.0039	0.0065	0.0038
May-98	U	N.S.	U	U	U
Aug-98	U	N.S.	U	0.0079	U
Nov-98	U	0.004	U	0.0041	0.0045
Feb-99	U	U	U	U	U
May-99	U	U	U	U	U
Aug-99	U	0.0048	U	0.0027	U
Nov-99	U	0.0065	U	0.0051	U
Mar-00	U	U	U	U	U
May-00	U	U	U	U	U
Aug-00	U	U	0.0047	U	U
Nov-00	U	U	U	U	0.0052
Mar-01	U	U	0.003	U	U
May-01	U	0.0081	U	0.0046	U
Aug-01	U	U	U	0.0038	U
Nov-01	U	0.0042	U	0.0041	U
Mar-02	U	U	U	0.0042	U
May-02	0.0043	0.0045	U	U	0.0037
Aug-02	U	0.0056	U	0.0055	U
Nov-02	0.0041	0.0038	0.0034	U	U
Mar-03	0.0042	U	0.0035	0.0034	U
May-03	U	0.0063	U	0.0036	U
Aug-03	U	0.0059	U	0.0037	0.0045

TEST 2
STATISTICS FOR POND 8S (WMU 7)

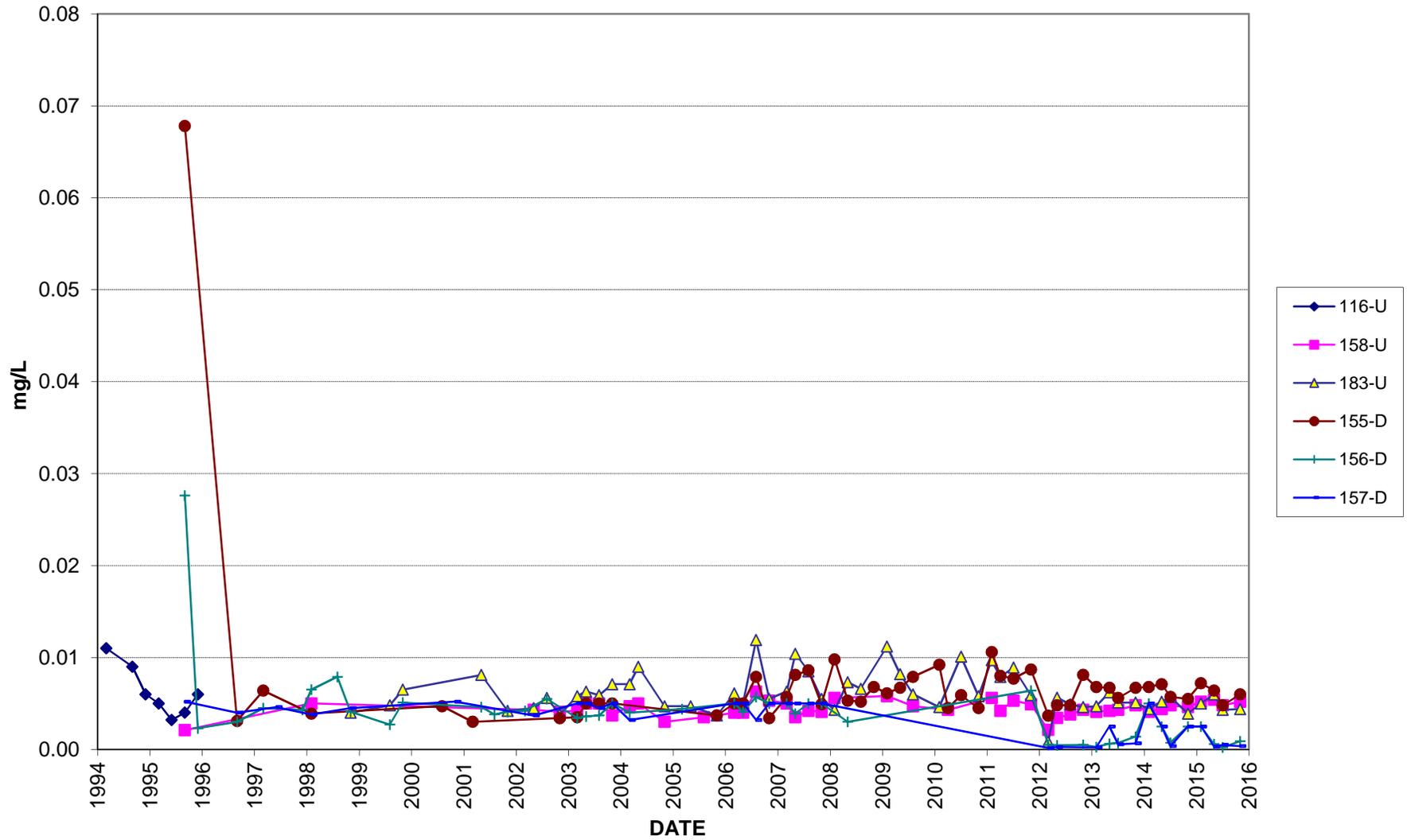
Selenium

Date	Upgradient Wells		Downgradient Wells		
	Well 158	Well 183	Well 155	Well 156	Well 157
Nov-03	0.0037	0.0071	U	U	U
Mar-04	0.0047	0.0071	U	0.004	0.0032
May-04	0.005	0.009	U	U	U
Aug-04	U	U	U	U	U
Nov-04	0.003	0.0047	U	U	U
Mar-05	U	U	U	0.0044	U
May-05	U	0.0047	U	U	U
Aug-05	0.0035	U	U	U	U
Nov-05	U	0.0037	0.0037	U	U
Feb-06	0.004	0.0061	U	U	U
May-06	0.004	0.005	U	0.0041	U
Aug-06	0.0063	0.0119	0.0079	0.0057	0.0032
Nov-06	0.0053	0.0055	0.0034	U	U
Feb-07	U	0.0063	0.0057	U	U
May-07	0.0035	0.0104	0.0081	0.0039	U
Aug-07	0.0042	0.0085	0.0086	U	U
Nov-07	0.0041	0.0055	0.0049	U	U
Feb-08	U	0.0043	0.0098	U	U
May-08	U	0.0073	0.0053	0.003	U
Aug-08	U	0.0066	0.0052	U	U
Nov-08	U	U	0.0068	U	U
Feb-09	0.0058	0.0112	0.0061	U	U
May-09	U	0.0082	0.0067	U	U
Aug-09	0.0047	0.006	0.0079	U	U
Nov-09	U	U	U	U	U
Feb-10	U	0.0046	0.0092	U	U
Apr-10	0.0043	U	0.0045	U	U
Jul-10	U	0.0101	0.0059	U	U
Nov-10	U	0.0058	0.0045	U	U
Feb-11	0.0056	0.0097	0.0106	U	U
Apr-11	0.0042	0.0079	0.008	U	U
Jul-11	0.0053	0.0089	0.0077	U	U
Nov-11	0.0049	0.0059	0.0087	0.0064	U
Mar-12	0.00214	0.00084	0.00368	0.00052	0.00015
May-12	0.00342	0.00563	0.00481	0.00046	0.00027
Aug-12	0.0038	0.0049	0.0048	U	U
Nov-12	0.0043	0.0046	0.0081	U	U
Feb-13	0.0041	0.0047	0.0068	U	U
May-13	0.0042	0.0062	0.0067	0.00062	U
Jul-13	0.0043	0.0051	0.0056	0.0007	0.00055
Nov-13	0.0048	0.0051	0.0067	0.0014	0.00067
Feb-14	0.0041	0.0044	0.0068	U	U
May-14	0.0044	0.0052	0.0071	U	U
Jul-14	0.0048	0.0057	0.0057	0.00073	0.00036
Nov-14	0.0046	0.0039	0.0055	U	U
Feb-15	0.0052	0.0050	0.0072	U	U
May-15	0.0054	0.0060	0.0064	0.00059	0.00032
Jul-15	0.0048	0.0043	0.0048	0.00023	U

TEST 2
STATISTICS FOR POND 8S (WMU 7)

Selenium					
<u>Date</u>	Upgradient Wells		Downgradient Wells		
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Nov-15	<i>0.0052</i>	<i>0.0044</i>	<i>0.0060</i>	<i>0.00090</i>	<i>0.00036</i>
Test 2 Results					
	Well 158	Well 183	Well 155	Well 156	Well 157
Pre-2015 Mean	0.0042	0.0063	0.0077	0.0045	0.0031
2015 Mean	0.0045	0.0048	0.0063	0.0007	0.0004
1991-2015 Statistical Summary					
Mean	0.0042	0.0062	0.0076	0.0044	0.0029
Median	0.0042	0.0057	0.0060	0.0040	0.0037
Standard Deviation	0.0009	0.0022	0.0097	0.0048	0.0019
Kurtosis	1.0479	0.7564	38.5437	21.4555	-1.5715
Skewness	-0.5433	0.7035	6.0883	4.2617	-0.5112
Minimum	0.0020	0.0008	0.0030	0.0005	0.0002
Maximum	0.0063	0.0119	0.0680	0.0280	0.0052
Count	37	49	42	31	15
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.					
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.					
All concentrations in mg/l.					

Selenium in Groundwater (WMU 7)



PHASE IV PONDS AND POND 8E

Waste Management Units 8 and 11

Note:

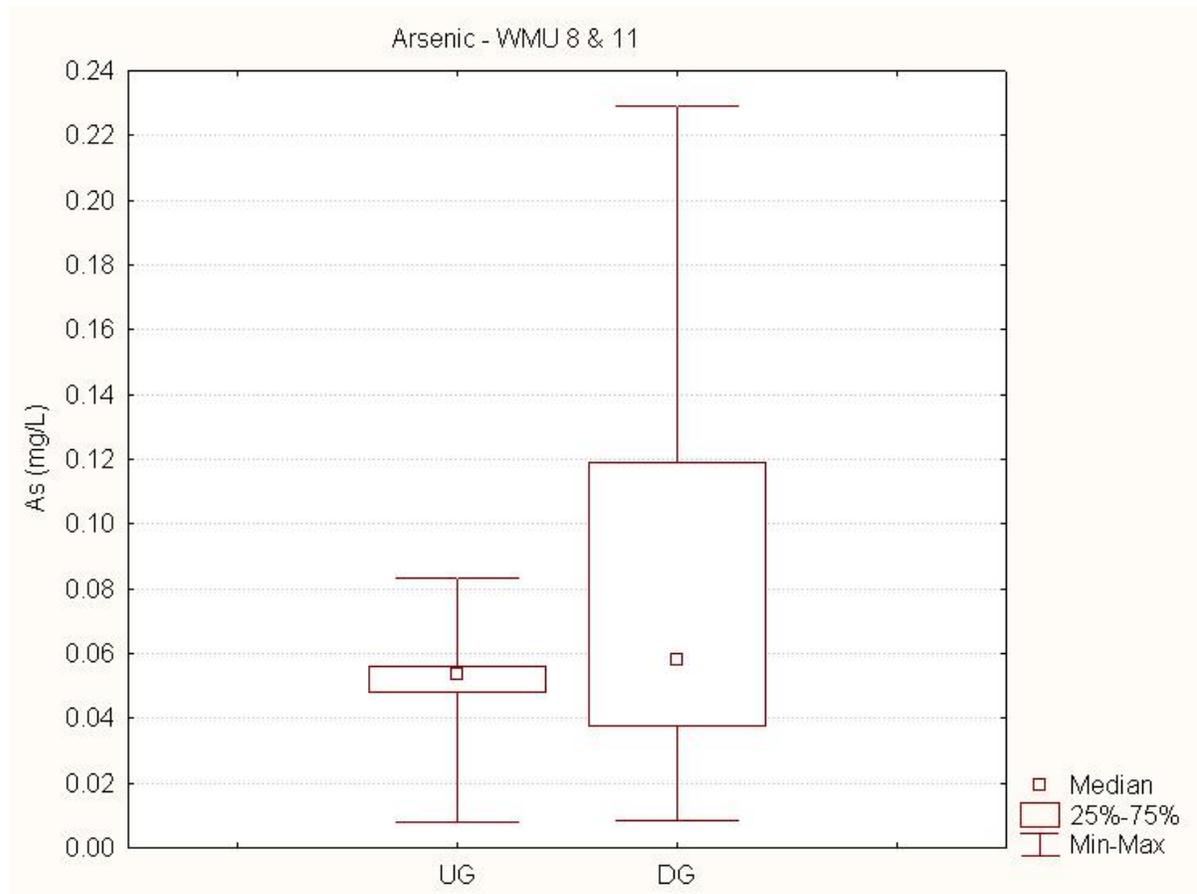
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

WMU 8 & 11 TEST 1 ARSENIC

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	82	0.054	16170.5	12767.5	-2.44	0.0147
Downgradient	376	0.058	88940.5			

Summary: The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

Arsenic

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>			
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Sep-91	N.S.	0.0920	0.1750	0.0430	N.S.
Dec-91	N.S.	0.0980	0.1780	0.0450	N.S.
Mar-92	N.S.	0.0810	0.1840	0.0590	N.S.
Jun-92	N.S.	0.2120	0.1950	0.0480	N.S.
Sep-92	N.S.	0.2290	0.1537	0.0520	N.S.
Dec-92	N.S.	0.1800	0.1790	0.0470	N.S.
Mar-93	N.S.	0.1640	0.1200	0.0580	N.S.
Jun-93	N.S.	0.1640	0.1818	0.0470	N.S.
Sep-93	N.S.	0.1270	0.2018	0.0550	N.S.
Dec-93	N.S.	0.1220	0.1722	0.0540	N.S.
Mar-94	N.S.	0.1280	0.1919	0.0550	N.S.
Jun-94	N.S.	0.1720	0.1284	0.0460	N.S.
Sep-94	N.S.	0.0580	0.1079	0.0540	N.S.
Dec-94	N.S.	0.1260	0.1758	0.0560	N.S.
Mar-95	N.S.	0.1050	0.1380	0.0430	N.S.
Jun-95	N.S.	0.0970	0.1558	0.0760	N.S.
Sep-95	0.0190	0.0960	0.1546	0.0690	0.0350
Dec-95	0.0080	0.1040	0.1532	0.0520	0.0480
Mar-96	0.0310	0.0770	0.1212	0.0460	0.0130
Jun-96	0.0430	0.0840	0.1219	0.0540	0.0240
Sep-96	0.0550	0.0980	0.1400	0.0630	0.0320
Dec-96	0.0590	0.1100	0.1600	0.0600	0.0300
Mar-97	0.0600	0.0950	0.1500	0.0590	0.0220
Jun-97	0.0610	0.0920	0.1400	0.0560	0.0240
Sep-97	0.0670	0.0980	0.1500	0.0700	0.0370
Dec-97	0.0620	0.0890	0.1400	0.0580	0.0260
Feb-98	0.0520	0.0820	0.1300	0.0540	0.0240
May-98	0.0580	0.0850	0.1400	0.0650	0.0290
Aug-98	0.0560	0.0790	0.1300	0.0680	0.0240
Nov-98	0.0540	0.0680	0.1100	0.0510	0.0210
Feb-99	0.0620	0.0860	0.1500	0.0650	0.0280
May-99	0.0550	0.0760	0.1500	0.0660	0.0270
Aug-99	0.0525	0.0828	0.1520	0.0817	0.0300
Nov-99	0.0834	0.0772	0.1520	0.0726	0.0309
Mar-00	0.0609	0.0747	0.1400	0.0712	0.0317
May-00	0.0523	0.0722	0.1440	0.0669	0.0272
Aug-00	0.0557	0.0716	0.1450	0.0731	0.0304
Nov-00	0.0575	0.0672	0.1430	0.0749	0.0310
Feb-01	0.0536	0.0663	0.1390	0.0612	0.0273
May-01	0.0530	0.0632	0.1400	0.0667	0.0257
Aug-01	0.0541	0.0568	0.1310	0.0552	0.0248
Nov-01	0.0537	0.0663	0.1350	0.0673	0.0262
Mar-02	0.0539	0.0622	0.1400	0.0611	0.0273
May-02	0.0567	0.0589	0.1350	0.0628	0.0296
Jul-02	0.0478	0.0572	0.1290	0.0659	0.0273
Nov-02	0.0552	0.0596	0.1380	0.0662	0.0268
Mar-03	0.0597	0.0596	0.1390	0.0596	0.0278
May-03	0.0562	0.0597	0.1400	0.0680	0.0263

TEST 2
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

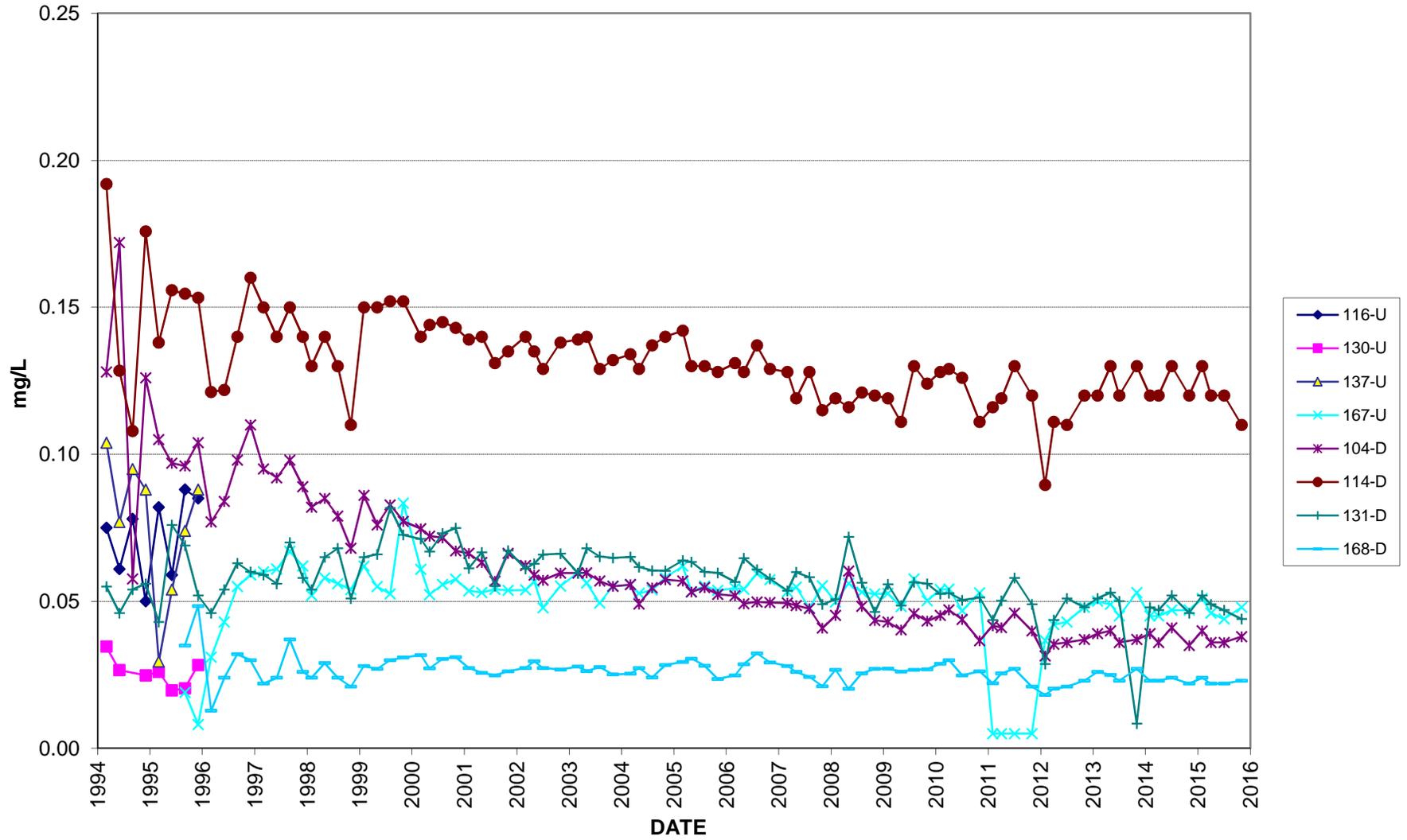
Arsenic

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>			
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Aug-03	0.0494	0.0569	0.1290	0.0652	0.0276
Nov-03	0.0552	0.0551	0.1320	0.0648	0.0251
Mar-04	0.0556	0.0557	0.1340	0.0651	0.0254
May-04	0.0527	0.0491	0.1290	0.0617	0.0273
Aug-04	0.0539	0.0546	0.1370	0.0605	0.0241
Nov-04	0.0580	0.0574	0.1400	0.0604	0.0283
Mar-05	0.0620	0.0569	0.1420	0.0639	0.0294
May-05	0.0532	0.0532	0.1300	0.0634	0.0305
Aug-05	0.0552	0.0547	0.1300	0.0600	0.0281
Nov-05	0.0537	0.0524	0.1280	0.0597	0.0236
Feb-06	0.0545	0.0519	0.1310	0.0566	0.0248
May-06	0.0541	0.0492	0.1280	0.0647	0.0286
Aug-06	0.0594	0.0498	0.1370	0.0608	0.0323
Nov-06	0.0574	0.0496	0.1290	0.0577	0.0292
Feb-07	0.0532	0.0494	0.1280	0.0536	0.0280
May-07	0.0549	0.0486	0.1190	0.0599	0.0260
Aug-07	0.0477	0.0475	0.1280	0.0582	0.0243
Nov-07	0.0553	0.0409	0.1150	0.0490	0.0211
Feb-08	0.0498	0.0452	0.1190	0.0507	0.0267
May-08	0.0561	0.0603	0.1160	0.0719	0.0202
Aug-08	0.0531	0.0483	0.1210	0.0563	0.0255
Nov-08	0.0525	0.0435	0.1200	0.0464	0.0270
Feb-09	0.0527	0.0430	0.1190	0.0558	0.0271
May-09	0.0482	0.0403	0.1110	0.0486	0.0261
Aug-09	0.0576	0.0458	0.1300	0.0565	0.0267
Nov-09	0.0502	0.0433	0.1240	0.0560	0.0269
Feb-10	0.0540	0.0452	0.1280	0.0525	0.0288
Apr-10	0.0542	0.0471	0.1290	0.0528	0.0300
Jul-10	0.0468	0.0438	0.1260	0.0504	0.0248
Nov-10	0.0529	0.0366	0.1110	0.0513	0.0262
Feb-11	0.0441	0.0417	0.1160	0.0437	0.0221
Apr-11	0.0494	0.0411	0.1190	0.0502	0.0255
Aug-11	0.0560	0.0460	0.1300	0.0580	0.0270
Nov-11	0.0510	0.0400	0.1200	0.0490	0.0210
Feb-12	0.0367	0.0314	0.0896	0.0287	0.0182
May-12	0.0421	0.0354	0.1110	0.0437	0.0203
Aug-12	0.0430	0.036	0.11	0.051	0.021
Oct-12	0.0480	0.037	0.12	0.048	0.023
Feb-13	0.0500	0.039	0.12	0.051	0.026
May-13	0.0490	0.040	0.13	0.053	0.025
Jul-13	0.0450	0.036	0.12	0.050	0.023
Nov-13	0.0530	0.037	0.13	0.008	0.027
Feb-14	0.0450	0.039	0.12	0.048	0.023
Apr-14	0.0450	0.036	0.12	0.047	0.023
Jul-14	0.0470	0.041	0.13	0.052	0.024
Nov-14	0.0470	0.035	0.12	0.046	0.022
Feb-15	0.0510	0.040	0.13	0.052	0.024

TEST 2
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

Arsenic					
<u>Date</u>	Upgradient Well		Downgradient Wells		
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
May-15	<i>0.0460</i>	<i>0.036</i>	<i>0.12</i>	<i>0.050</i>	<i>0.022</i>
Jul-15	<i>0.0440</i>	<i>0.036</i>	<i>0.12</i>	<i>0.049</i>	<i>0.022</i>
Nov-15	<i>0.0480</i>	<i>0.038</i>	<i>0.11</i>	<i>0.049</i>	<i>0.023</i>
Test 2 Results					
	Well 167	Well 104	Well 114	Well 131	Well 168
Pre-2015 Mean	0.0522	0.0715	0.1365	0.0567	0.0265
2015 Mean	0.0473	0.0375	0.1200	0.0500	0.0228
1991-2015 Statistical Summary					
Mean	0.052	0.070	0.136	0.056	0.026
Median	0.053	0.057	0.130	0.056	0.026
Standard Deviation	0.009	0.039	0.021	0.010	0.004
Kurtosis	8.911	4.453	1.507	4.490	6.982
Skewness	-1.605	1.990	1.152	-0.917	1.280
Minimum	0.008	0.031	0.090	0.008	0.013
Maximum	0.083	0.229	0.202	0.082	0.048
Count	82	98	98	98	82
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.					
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.					
All concentrations in mg/l.					

Arsenic in Groundwater (WMU 8 & 11)

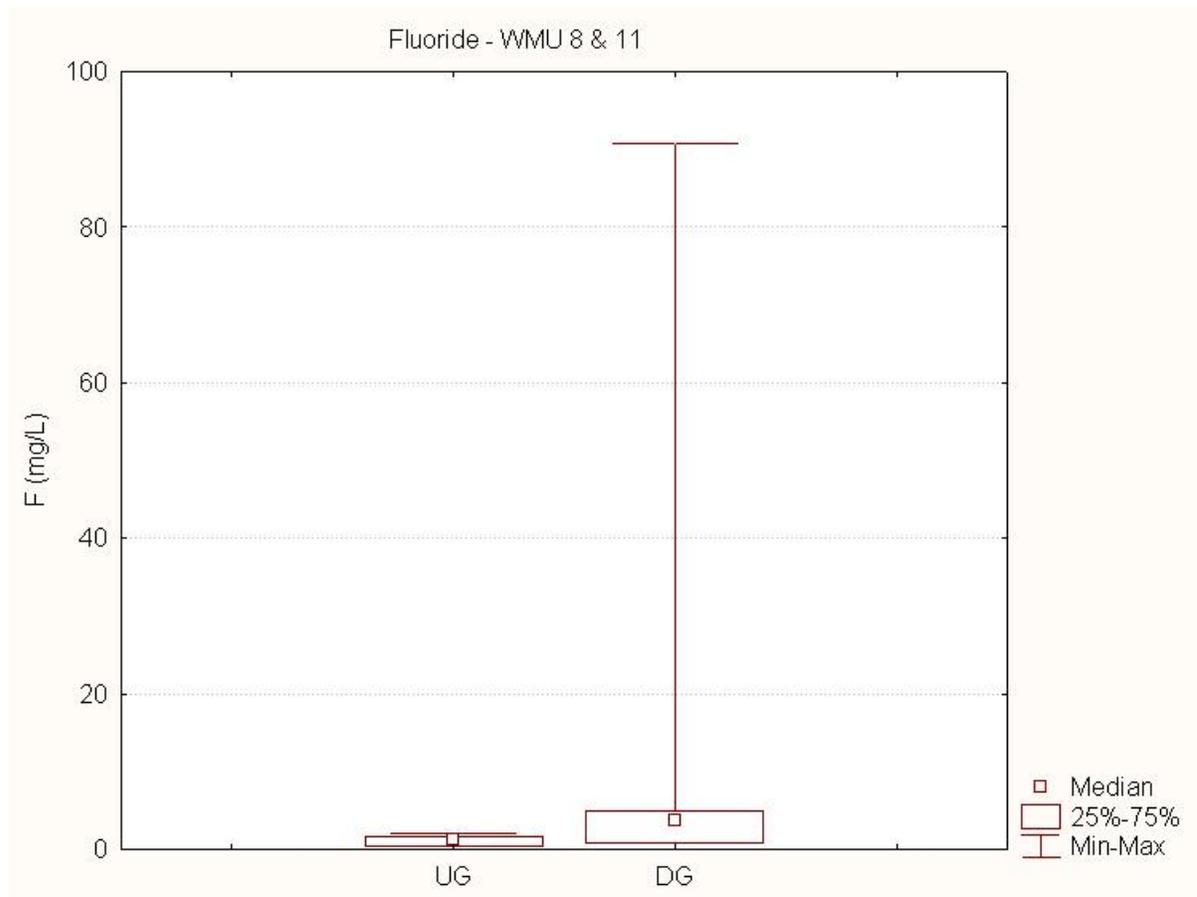


WMU 8 & 11 TEST 1 FLUORIDE

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	21	1.30	1981.5	1750.5	-3.40	0.0007
Downgradient	300	3.70	49699.5			

Summary: The median fluoride concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

Fluoride					
<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>		
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Sep-91	N.S.	15.000	0.700	0.300	N.S.
Dec-91	N.S.	11.600	0.740	0.230	N.S.
Mar-92	N.S.	19.000	0.848	0.200	N.S.
Jun-92	N.S.	9.170	0.826	0.185	N.S.
Sep-92	N.S.	8.400	0.810	0.200	N.S.
Dec-92	N.S.	8.600	0.700	0.200	N.S.
Mar-93	N.S.	8.200	0.800	0.200	N.S.
Jun-93	N.S.	8.400	0.800	0.300	N.S.
Sep-93	N.S.	7.580	0.600	1.450	N.S.
Dec-93	N.S.	6.500	0.500	U	N.S.
Mar-94	N.S.	8.000	0.600	U	N.S.
Jun-94	N.S.	8.100	0.854	0.800	N.S.
Sep-94	N.S.	6.500	0.700	0.600	N.S.
Dec-94	N.S.	6.700	0.800	0.400	N.S.
Mar-95	N.S.	6.320	0.800	0.286	N.S.
Jun-95	N.S.	6.700	0.806	0.300	N.S.
Sep-95	0.360	6.920	0.872	U	54.400
Dec-95	0.236	4.940	0.490	U	29.600
Mar-96	U	6.200	U	U	9.100
Jun-96	0.324	5.100	0.670	0.284	10.400
Sep-96	U	6.040	U	U	5.600
Dec-96	0.370	5.560	0.610	0.100	7.530
Mar-97	0.100	5.300	0.660	0.180	5.900
Jun-97	U	4.900	0.610	0.100	4.910
Sep-97	U	4.700	0.530	U	4.600
Dec-97	U	4.850	0.630	U	4.980
Feb-98	U	5.3	0.69	U	5.1
May-98	U	4.9	0.66	U	5
Aug-98	U	4.6	0.75	U	4.8
Nov-98	U	4.9	0.82	U	4.9
Feb-99	U	5	0.8	0.13	5
May-99	U	4.4	0.86	0.27	4.6
Aug-99	U	4.6	0.75	0.14	5
Nov-99	U	U	U	U	U
Mar-00	U	4.9	0.89	U	5.5
May-00	U	4.5	0.86	U	U
Aug-00	U	4.8	0.88	0.14	5.5
Nov-00	U	4.6	0.51	0.11	5.3
Feb-01	U	4.5	0.95	U	4.8
May-01	U	4.2	1.07	0.11	4.5
Aug-01	U	3.8	0.82	0.13	4.6
Nov-01	U	4.2	6.3	U	4.7
Mar-02	U	4.2	1.01	U	4.6
May-02	N.S.	4.5	N.S.	N.S.	5.6
Jul-02	N.S.	4.2	N.S.	N.S.	5
Nov-02	U	4.3	0.63	U	5.3
Mar-03	U	4.8	0.73	0.13	5.7
May-03	U	4.2	0.94	U	5.2

TEST 2
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

Fluoride					
<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>		
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Aug-03	U	4.3	0.7	U	5
Nov-03	U	4.4	0.85	U	4.9
Mar-04	U	4.4	0.89	U	5.2
May-04	U	4.4	0.91	U	5.2
Aug-04	U	4.2	0.82	U	5.3
Nov-04	1.3	4.2	0.86	U	5.6
Mar-05	U	4.7	0.88	U	6.2
May-05	U	4.6	N.S.	U	5
Aug-05	U	4.6	0.93	U	6.4
Nov-05	U	4.1	0.65	U	5.6
Feb-06	U	4.2	0.92	U	5.4
May-06	U	4	0.71	73.6	4.8
Aug-06	U	3.9	0.889	U	4.6
Nov-06	U	3.8	0.813	U	4.2
Feb-07	1.5	3.8	0.895	U	4.5
May-07	U	3.9	0.858	U	4.7
Aug-07	U	3.8	0.833	U	4.7
Nov-07	U	3.8	0.759	U	4.4
Feb-08	U	3.9	0.93	U	5.6
May-08	U	3.9	0.5	U	5
Aug-08	U	3.6	1	U	4.4
Nov-08	U	3.8	0.61	U	4.8
Feb-09	U	3.8	0.9	U	5.6
May-09	U	3.8	0.9	U	5.5
Aug-09	U	3.5	0.78	U	4.7
Nov-09	U	3.8	0.7	U	5.1
Feb-10	U	3.7	0.94	U	4.95
Apr-10	U	3.9	0.9	U	4.95
Jul-10	U	2.9	0.94	U	5.075
Nov-10	U	3.5	0.83	U	5.15
Feb-11	U	3.6	0.85	U	4.6
Apr-11	U	3.5	0.94	U	4.1
Aug-11	U	3.6	0.95	U	3.4
Nov-11	U	3.4	0.84	U	3.9
Feb-12	<i>U</i>	<i>5.1</i>	<i>1</i>	<i>0.54</i>	<i>7</i>
May-12	1.5	3.3	0.93	0.056	1.6
Aug-12	0.63	3.4	1.1	U	4.4
Oct-12	2.0	3.3	0.82	U	4.5
Feb-13	1.9	3.3	0.86	U	4
May-13	1.7	3.3	1.3	U	4.2
Jul-13	0.8	3.2	1.1	90.8	4
Nov-13	2.0	1.8	0.96	U	3.2
Feb-14	1.7	3.1	1.1	U	3.9
Apr-14	1.6	2.9	0.91	U	3.8
Jul-14	0.41	2.3	1.2	U	3.3
Nov-14	1.6	2.8	0.95	U	4.0
Feb-15	1.5	<i>3.1</i>	<i>0.89</i>	<i>U</i>	<i>3.8</i>

TEST 2
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

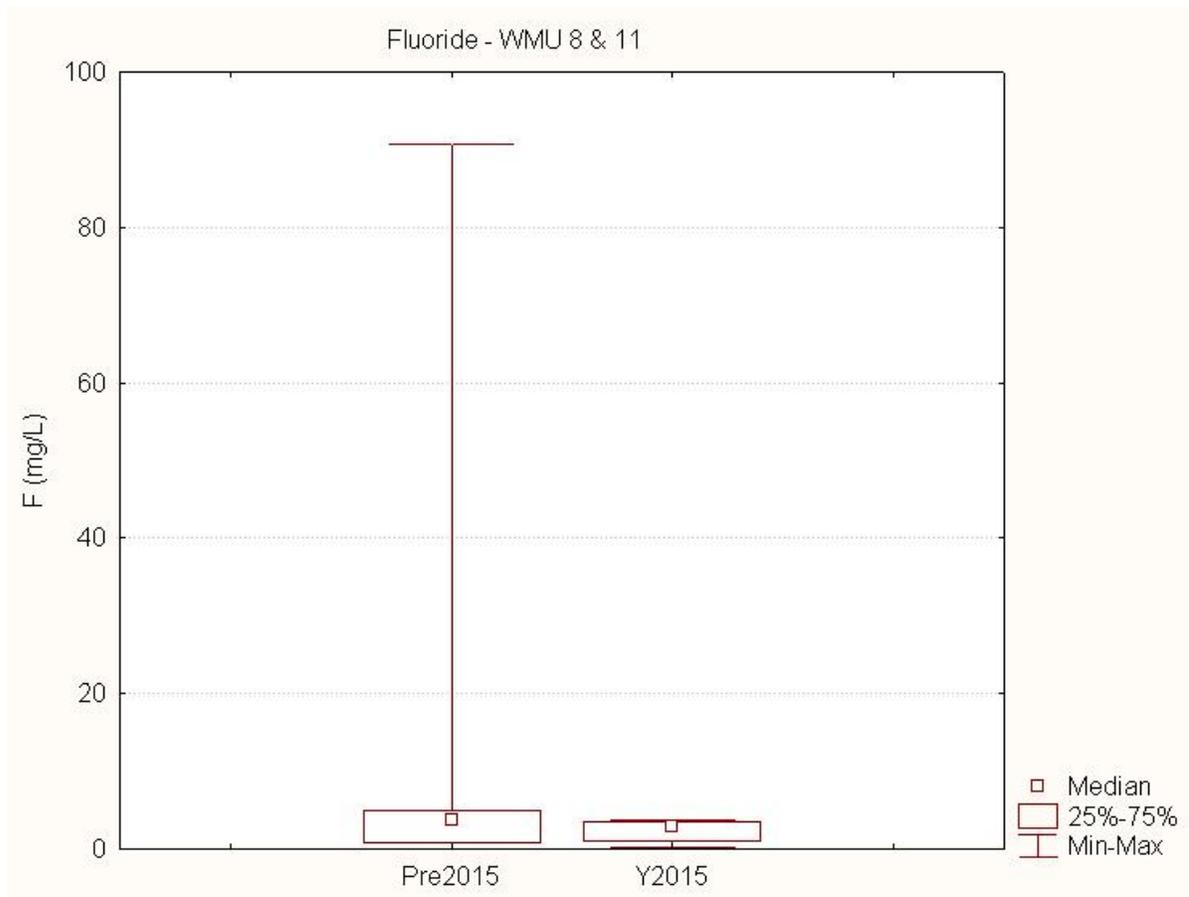
Fluoride					
<u>Date</u>	Upgradient Well		Downgradient Wells		
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
May-15	<i>U</i>	<i>3.1</i>	<i>1.5</i>	<i>U</i>	<i>3.5</i>
Jul-15	<i>0.93</i>	<i>2.9</i>	<i>0.95</i>	<i>0.19</i>	<i>3.7</i>
Nov-15	<i>1.0</i>	<i>2.7</i>	<i>0.92</i>	<i>U</i>	<i>3.7</i>
Test 2 Results					
	Well 167	Well 104	Well 114	Well 131	Well 168
Pre-2015 Mean	1.1128	5.0084	0.8839	5.7490	5.9756
2015 Mean	1.1433	2.9500	1.0650	0.1900	3.6750
1991-2015 Statistical Summary					
Mean	1.12	4.92	0.89	5.57	5.86
Median	1.30	4.30	0.85	0.20	4.93
Standard Deviation	0.64	2.42	0.59	20.58	6.25
Kurtosis	-1.51	14.04	77.60	13.53	49.27
Skewness	-0.20	3.21	8.47	3.80	6.77
Minimum	0.10	1.80	0.49	0.06	1.60
Maximum	2.00	19.00	6.30	90.80	54.40
Count	21	97	92	31	80
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.					

WMU 8 & 11 TEST 3 FLUORIDE

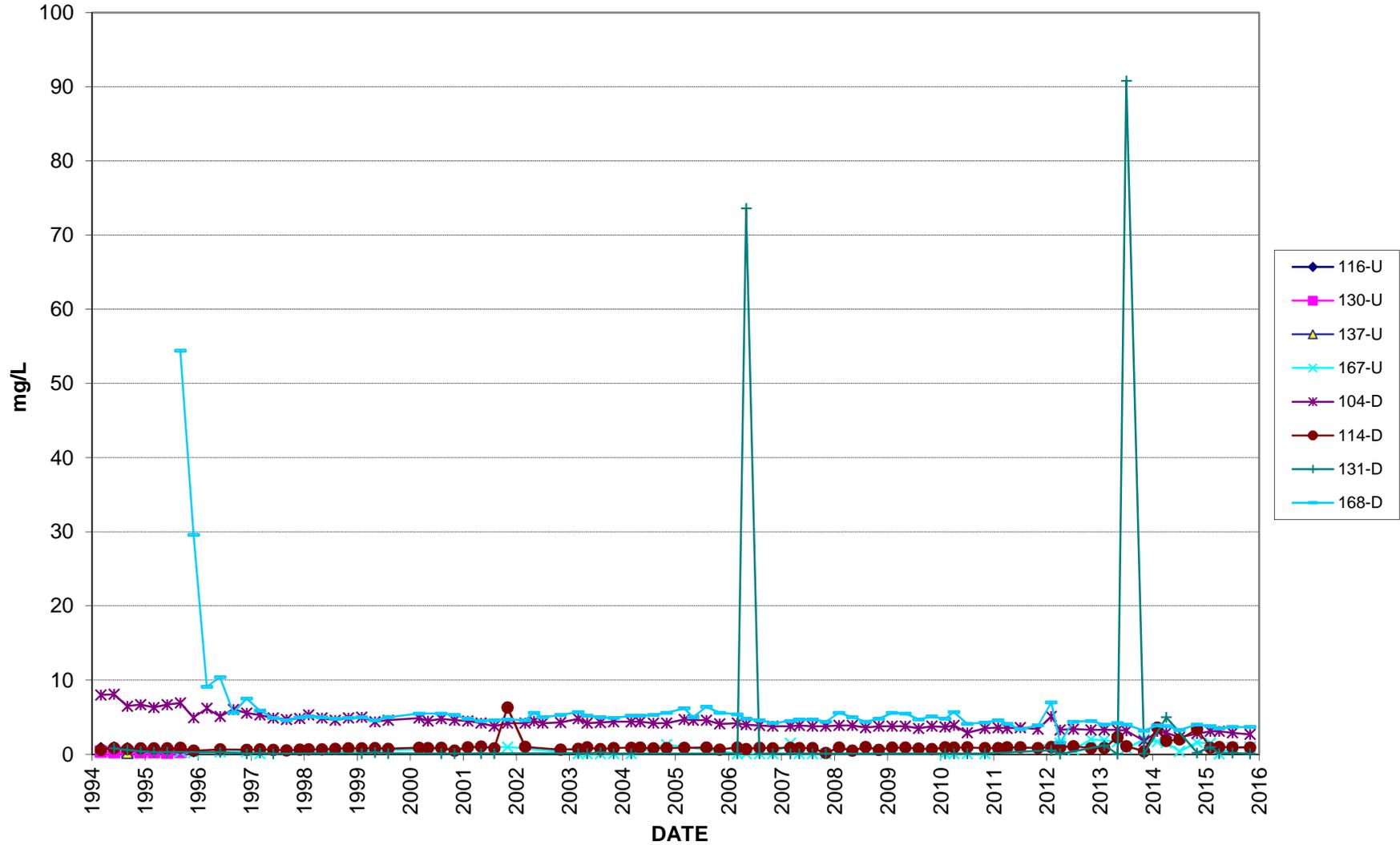
Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2015	287	3.80	43627.0	1432.0	1.42	0.16
Year 2015	13	2.90	1523.0			

Summary: For downgradient wells, the median of Pre-2015 fluoride concentration is not significantly different from the median of Year 2015 fluoride concentration.



Fluoride in Groundwater (WMU 8 & 11)

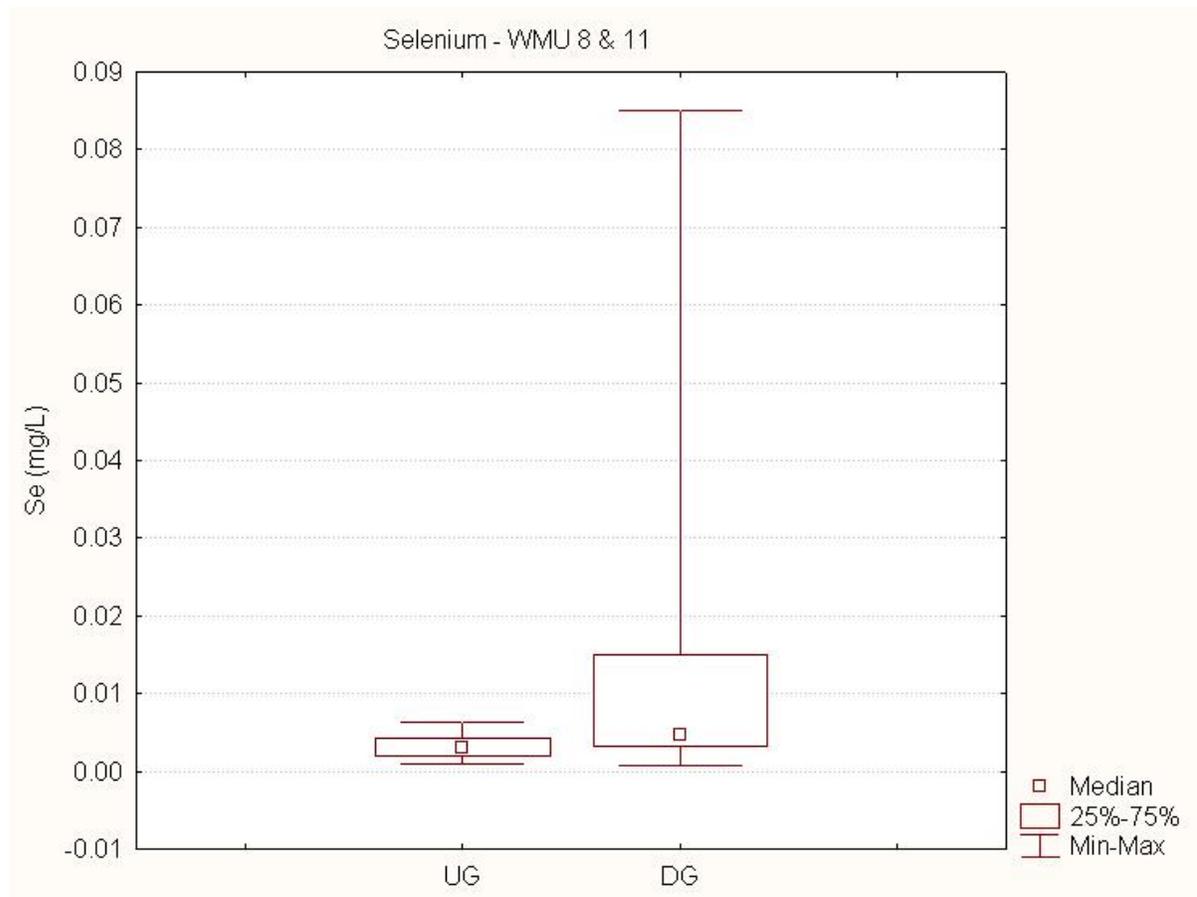


WMU 8 & 11 TEST 1 SELENIUM

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	36	0.0030	3236.5	2570.5	-4.11	<0.0001
Downgradient	248	0.0046	37233.5			

Summary: The median selenium concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

Selenium					
<u>Date</u>	Upgradient Well	Downgradient Wells			
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Sep-91	N.S.	0.002	0.002	0.002	N.S.
Dec-91	N.S.	0.002	0.003	0.003	N.S.
Mar-92	N.S.	0.002	0.002	0.003	N.S.
Jun-92	N.S.	U	U	U	N.S.
Sep-92	N.S.	U	U	0.001	N.S.
Dec-92	N.S.	0.002	U	0.003	N.S.
Mar-93	N.S.	0.0040	0.0037	0.0060	N.S.
Jun-93	N.S.	U	0.0026	U	N.S.
Sep-93	N.S.	0.0030	0.0028	0.0050	N.S.
Dec-93	N.S.	0.0020	U	0.0040	N.S.
Mar-94	N.S.	U	U	U	N.S.
Jun-94	N.S.	U	0.0074	U	N.S.
Sep-94	N.S.	U	U	U	N.S.
Dec-94	N.S.	U	U	0.0020	N.S.
Mar-95	N.S.	U	0.0020	0.0020	N.S.
Jun-95	N.S.	U	0.0050	U	N.S.
Sep-95	U	U	U	U	0.0120
Dec-95	0.0030	U	U	0.0060	0.0140
Mar-96	U	U	U	U	0.0200
Jun-96	0.0040	U	U	0.0040	0.0170
Sep-96	U	0.0040	0.0034	0.0040	0.0170
Dec-96	U	0.0040	0.0039	U	0.0170
Mar-97	0.0059	U	0.0042	0.0087	0.0180
Jun-97	U	U	U	0.0054	0.0200
Sep-97	U	U	U	U	0.0200
Dec-97	0.0037	U	U	0.0034	0.0170
Feb-98	U	U	0.0043	0.0052	0.0190
May-98	0.0035	0.0036	U	U	0.0160
Aug-98	U	U	0.0048	U	0.0150
Nov-98	U	0.0080	0.0043	U	0.0130
Feb-99	U	0.0037	U	0.0056	0.0190
May-99	U	U	U	U	0.0160
Aug-99	U	0.0038	0.0041	0.0049	0.0158
Nov-99	0.0064	U	U	0.0064	0.0171
Mar-00	U	U	U	U	0.0179
May-00	U	U	U	U	0.0152
Aug-00	U	U	U	U	0.0130
Nov-00	U	U	U	U	0.0158
Feb-01	U	U	0.0035	U	0.0144
May-01	0.0058	U	U	0.0061	0.0174
Aug-01	U	U	U	U	0.0109
Nov-01	U	0.0048	U	0.0042	0.0171
Mar-02	U	0.0040	U	0.0063	0.0148
May-02	0.0061	0.0044	0.0045	0.0054	0.0156
Jul-02	U	0.0050	U	0.0029	0.0159
Nov-02	0.0046	0.0048	0.0049	0.0049	0.0168
Mar-03	0.0046	0.0033	U	U	U
May-03	0.0038	U	0.0041	0.0064	0.0128
Aug-03	U	U	0.0047	0.0064	0.0150

STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

Selenium					
<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>		
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Nov-03	U	U	0.0050	0.0042	0.0130
Mar-04	0.0040	0.0033	0.0043	0.0054	0.0143
May-04	0.0036	0.0033	0.0034	0.0048	0.0153
Aug-04	U	U	U	U	0.0110
Nov-04	0.0050	0.0038	0.0050	0.0037	0.0136
Mar-05	U	0.0027	0.0042	0.0039	0.0150
May-05	U	U	0.0028	0.0040	0.0157
Aug-05	U	0.0042	0.0026	0.0039	0.0135
Nov-05	U	U	U	U	0.0148
Feb-06	U	0.0034	0.0038	0.0044	0.0133
May-06	0.0041	U	0.0043	0.0044	0.0157
Aug-06	0.0052	0.0069	0.0037	0.0081	0.0242
Nov-06	0.0030	U	0.0034	0.0035	0.0269
Feb-07	U	U	U	0.0042	0.0264
May-07	0.0040	0.0041	0.0043	0.0074	0.0279
Aug-07	0.0045	0.0046	0.0039	0.0047	0.0297
Nov-07	U	0.0029	U	U	0.0346
Feb-08	U	0.0039	0.0044	U	0.0309
May-08	0.0027	U	U	0.0052	0.0335
Aug-08	U	U	U	U	0.0365
Nov-08	U	U	U	U	0.0398
Feb-09	U	0.0046	U	0.0063	0.0483
May-09	U	0.0064	U	U	0.0480
Aug-09	U	0.0063	0.0054	U	0.0611
Nov-09	U	U	U	U	0.0674
Feb-10	U	U	U	U	0.0711
Apr-10	U	U	U	U	0.0734
Jul-10	U	U	U	0.0044	0.0606
Nov-10	U	U	0.0046	U	0.0765
Feb-11	U	U	U	U	0.0704
Apr-11	U	0.0051	0.0054	U	0.0761
Aug-11	U	0.0041	0.0053	U	0.0800
Nov-11	U	0.0057	U	0.0043	0.0820
Feb-12	0.0010	0.0018	0.0013	0.0007	0.0412
May-12	0.0015	0.0025	0.0019	0.0011	0.0586
Aug-12	0.0019	0.0031	0.0021	0.0008	0.070
Oct-12	0.0020	0.0030	0.0019	0.0011	0.076
Feb-13	0.0021	0.0035	0.0026	0.0011	0.082
May-13	0.0022	0.0037	0.0027	0.0011	0.007
Jul-13	0.0021	0.0030	0.0022	0.0009	0.073
Nov-13	0.0020	0.0033	0.0025	U	0.085
Feb-14	0.0018	0.0033	0.0022	0.0007	0.067
Apr-14	0.0022	0.0037	0.0021	0.0008	0.070
Jul-14	0.0024	0.0035	0.0024	0.0010	0.084
Nov-14	0.0018	0.0028	0.0023	U	0.065
Feb-15	0.0024	0.0035	0.0024	0.00078	0.073
May-15	0.0022	0.0035	0.0022	0.00083	0.076
Jul-15	0.0019	0.0031	0.0021	0.00078	0.064

STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

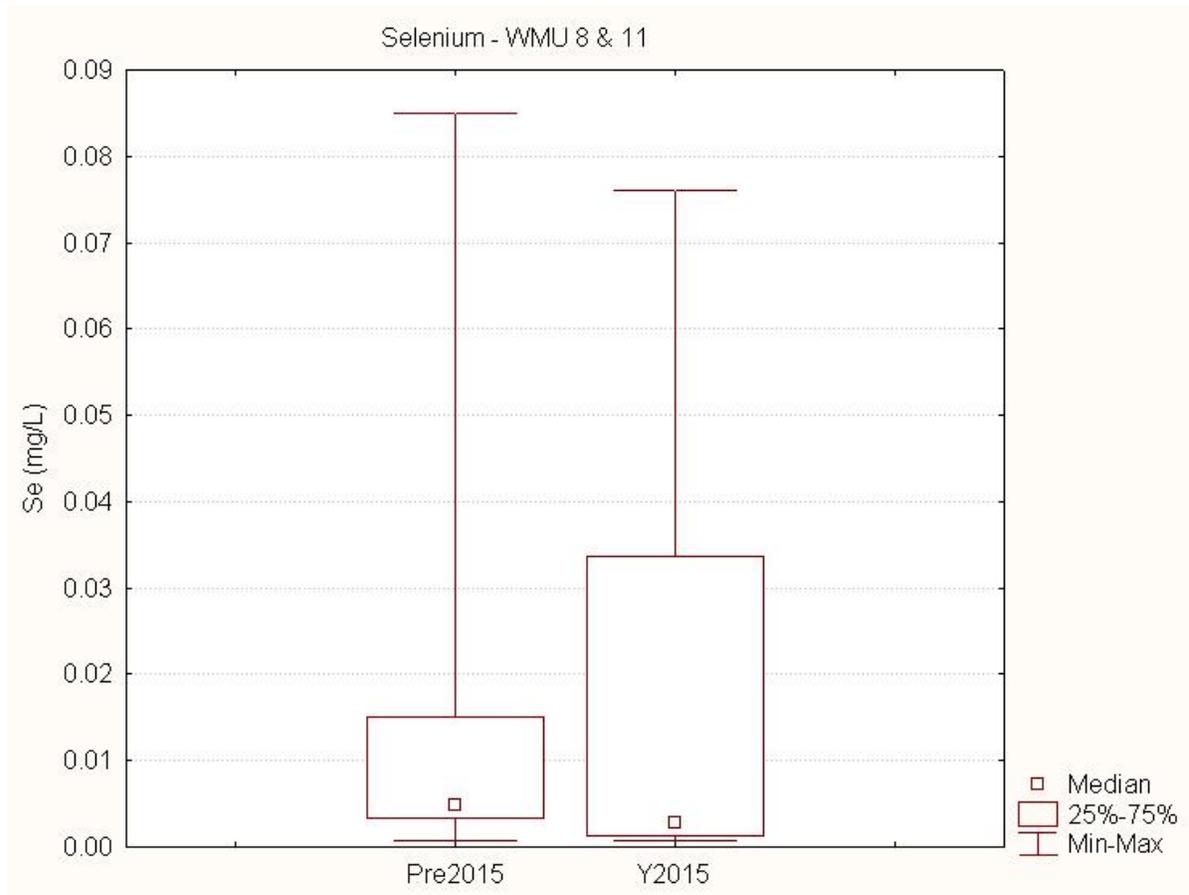
Selenium					
<u>Date</u>	Upgradient Well	Downgradient Wells			
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Nov-15	<i>0.0021</i>	<i>0.0032</i>	<i>0.0018</i>	<i>0.00071</i>	<i>0.074</i>
Test 2 Results					
	Well 167	Well 104	Well 114	Well 131	Well 168
Pre-2015 Mean	0.0035	0.0038	0.0036	0.0040	0.0334
2015 Mean	<i>0.0022</i>	0.0033	0.0021	0.0008	0.0718
1991-2015 Statistical Summary					
Mean	0.0033	0.0038	0.0035	0.0038	0.035
Median	0.0030	0.0036	0.0035	0.0040	0.019
Standard Deviation	0.0015	0.0013	0.0013	0.0021	0.026
Kurtosis	-0.750	2.018	0.026	-0.802	-1.154
Skewness	0.557	1.138	0.469	0.039	0.751
Minimum	0.0010	0.0018	0.0013	0.0007	0.0068
Maximum	0.0064	0.0080	0.0074	0.0087	0.0850
Count	36	52	55	60	81
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.					

WMU 8 & 11 TEST 3 SELENIUM

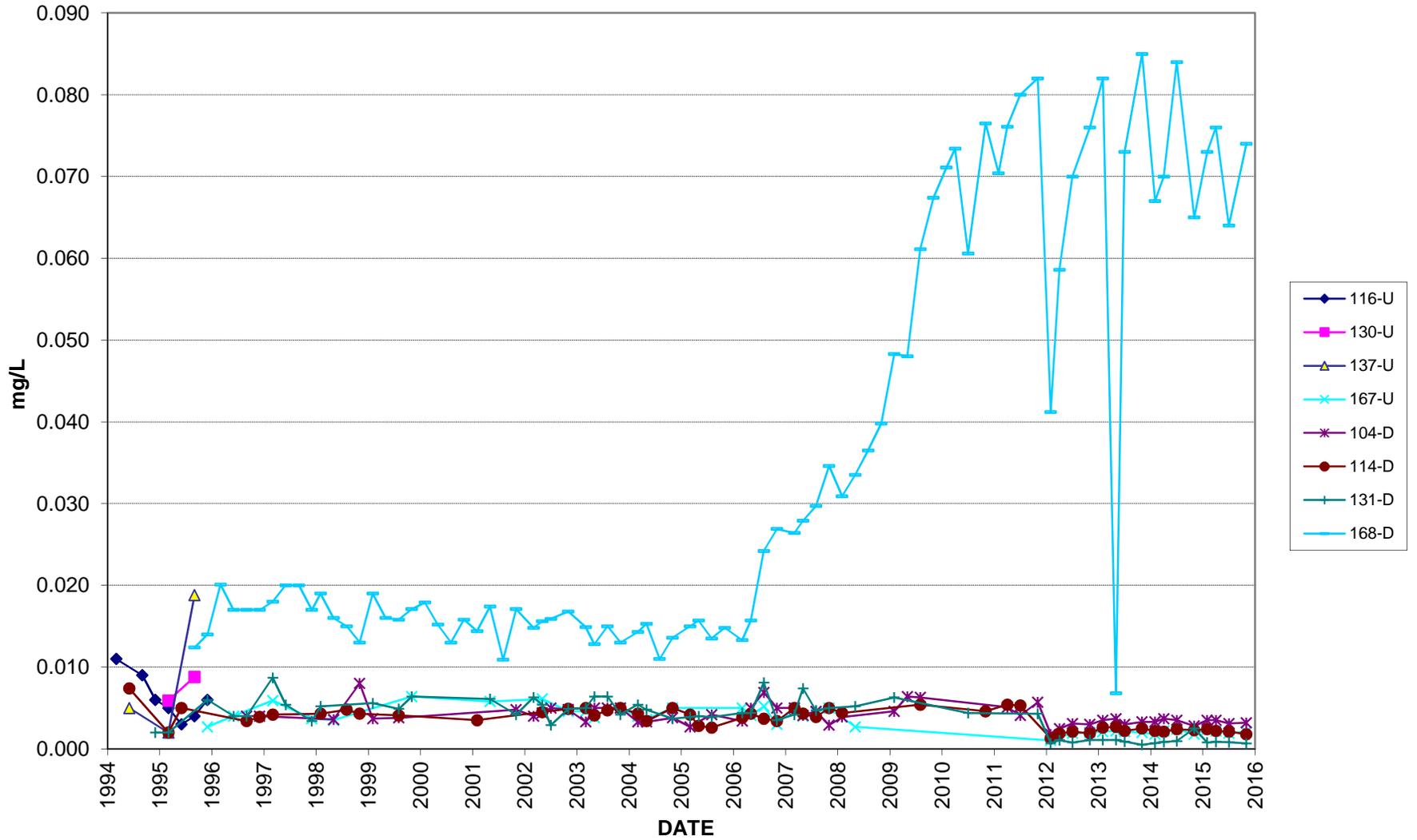
Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2015	232	0.0048	29506.5	1233.5	2.24	0.025
Year 2015	16	0.0028	1369.5			

Summary: For downgradient wells, the median of Pre-2015 selenium concentration is significantly higher than the median of Year 2015 selenium concentration.



Selenium in Groundwater (WMU 8 & 11)



POND 9E

Waste Management Unit 9

Note:

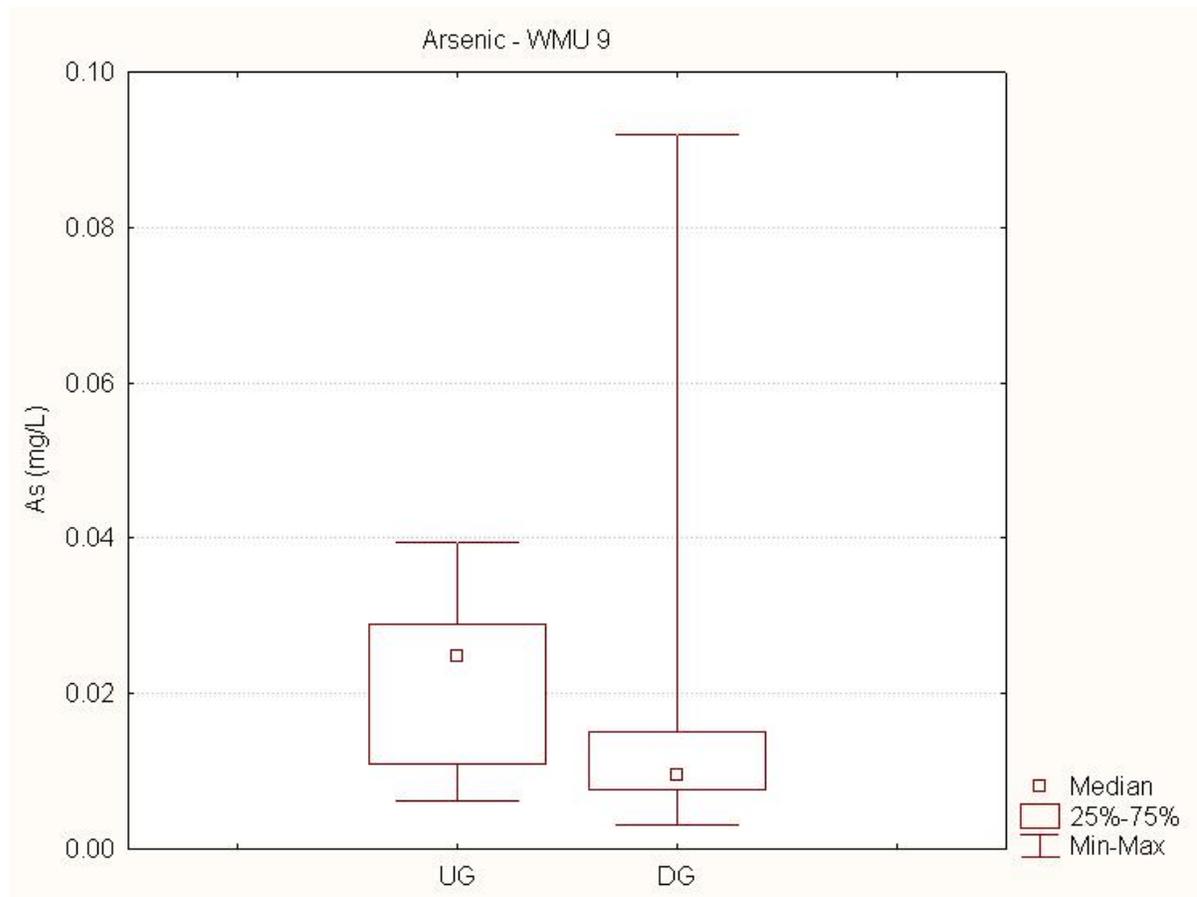
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

WMU 9 TEST 1 ARSENIC

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	180	0.025	52508.5	9861.5	10.17	<0.0001
Downgradient	256	0.0096	42757.5			

Summary: The median arsenic concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 9E (WMU 9)

Arsenic

Date	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	Well 113	Well 124	Well 126	Well 127	Well 128
Sep-91	0.0366	0.0140	0.0080	0.0120	0.0250
Dec-91	0.0382	0.0160	0.0080	0.0120	0.0240
Mar-92	0.0349	0.0150	0.0080	0.0110	0.0230
Jun-92	0.0308	0.0170	U	0.0920	0.0250
Sep-92	0.0303	U	U	0.0120	0.0240
Dec-92	0.0321	U	U	U	0.0260
Mar-93	0.0394	0.0130	0.0130	0.0060	0.0250
Jun-93	0.0291	0.0120	0.0100	0.0080	0.0240
Sep-93	0.0350	0.0080	0.0060	0.0090	0.0190
Dec-93	0.0276	0.0120	0.0080	0.0100	0.0180
Mar-94	0.0372	U	U	U	0.0240
Jun-94	0.0271	0.0100	0.0070	0.0090	0.0140
Sep-94	0.0198	0.0110	0.0080	0.0050	0.0190
Dec-94	0.0362	0.0100	0.0100	0.0070	0.0180
Mar-95	0.0250	0.0140	0.0100	0.0120	0.0200
Jun-95	0.0257	0.0130	U	U	0.0200
Sep-95	U	0.0087	0.0060	0.0040	0.0140
Dec-95	0.0267	U	U	U	U
Mar-96	0.0281	0.0110	0.0080	0.0090	0.0190
Jun-96	0.0278	0.0120	0.0070	0.0090	0.0210
Sep-96	0.0320	0.0130	0.0110	0.0110	0.0220
Dec-96	U	U	U	0.0120	U
Mar-97	0.0270	0.0120	0.0069	0.0077	0.0170
Jun-97	0.0320	U	U	U	0.0200
Sep-97	0.0350	0.0100	0.0120	0.0072	0.0190
Dec-97	0.0290	U	U	U	U
Feb-98	0.0270	U	U	U	0.0190
May-98	0.0300	0.0110	0.0079	0.0096	0.0200
Aug-98	0.0270	0.0150	0.0089	0.0094	0.0200
Nov-98	0.0290	0.0130	0.0059	0.0096	0.0200
Feb-99	0.0300	0.0140	0.0110	0.0098	0.0200
May-99	0.0340	0.0130	U	U	0.0210
Aug-99	0.0281	0.0111	0.0062	0.0075	0.0195
Nov-99	0.0311	0.0139	0.0091	0.0097	0.0194
Mar-00	0.0305	U	U	U	0.0179
May-00	0.0306	0.0102	0.0071	0.0088	0.0170
Aug-00	0.0286	0.0131	U	U	0.0184
Nov-00	0.0337	0.0139	0.0095	0.0106	0.0224
Feb-01	0.0303	0.0102	0.0057	0.0096	0.0177
May-01	0.0307	0.0113	0.0076	0.0120	0.0200
Aug-01	0.0275	0.0130	0.0092	0.0083	0.0218
Nov-01	0.0281	0.0114	0.0077	0.0103	0.0182
Mar-02	0.0313	0.0111	0.0079	0.0087	0.0179
May-02	0.0290	U	U	U	0.0168
Jul-02	0.0316	U	U	U	0.0218
Nov-02	0.0298	0.0111	0.0089	0.0072	0.0166
Mar-03	0.0282	U	U	U	U
May-03	0.0286	0.0111	0.0075	0.0081	0.0173
Aug-03	0.0292	0.0115	U	U	0.0179

TEST 2
STATISTICS FOR POND 9E (WMU 9)

Arsenic

Date	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	Well 113	Well 124	Well 126	Well 127	Well 128
Nov-03	0.0097	0.0282	0.0070	0.0083	0.0119
Mar-04	0.0316	0.0118	0.0088	0.0084	0.0184
May-04	0.0303	0.0109	0.0093	0.0108	0.0177
Aug-04	0.0273	0.0100	0.0076	0.0083	0.0145
Nov-04	0.0281	0.0095	0.0082	0.0084	0.0158
Mar-05	0.0327	0.0103	0.0082	0.0100	0.0179
May-05	0.0317	0.0115	0.0087	0.0094	0.0182
Aug-05	0.0331	0.0131	0.0093	0.0108	0.0190
Nov-05	0.0284	0.0110	0.0075	0.0089	0.0146
Feb-06	0.0295	0.0086	0.0085	0.0085	0.0159
May-06	0.0282	0.0109	0.0090	0.0080	0.0177
Aug-06	0.0330	0.0132	0.0120	0.0114	0.0208
Nov-06	0.0291	0.0100	0.0081	0.0081	0.0150
Feb-07	0.0275	0.0096	0.0076	0.0080	0.0156
May-07	0.0266	0.0107	0.0104	0.0075	0.0157
Aug-07	0.0276	0.0096	0.0062	0.0061	0.0149
Nov-07	0.0236	0.0066	0.0041	0.0031	0.0101
Feb-08	0.0283	U	U	U	0.0145
May-08	0.0211	U	U	0.0053	0.0198
Aug-08	0.0283	0.0095	0.0084	0.0075	0.0145
Nov-08	0.0267	0.0105	0.0092	0.0083	0.0133
Feb-09	0.0271	0.0116	0.0088	0.0064	0.0135
May-09	0.0245	0.0104	0.0090	0.0083	0.0154
Aug-09	0.0279	0.0109	0.0061	0.0095	0.0149
Nov-09	0.0304	0.0113	0.0104	0.0096	0.0173
Feb-10	0.0296	0.0103	0.0092	0.0081	0.0165
Apr-10	0.0343	0.0134	0.0110	0.0103	0.0187
Jul-10	0.0296	0.0092	0.0069	0.0065	0.0152
Nov-10	0.0266	0.0103	0.0080	0.0087	0.0144
Feb-11	0.0264	0.0077	0.0072	0.0049	0.0112
Apr-11	0.0300	0.0097	0.0079	0.0068	0.0146
Jul-11	0.0310	0.0110	0.0088	0.0076	0.0140
Nov-11	0.0270	0.0091	0.0070	0.0074	0.0170
Feb-12	0.0213	0.0062	0.0060	0.0062	0.0118
May-12	0.0243	0.0084	0.0070	0.0067	0.0129
Aug-12	0.0250	0.0090	0.0077	0.0071	0.014
Oct-12	0.0260	0.0091	0.0075	0.0072	0.013
Feb-13	0.0270	0.0094	0.0080	0.0076	0.015
May-13	0.0290	0.0096	0.0078	0.0072	0.014
Aug-13	0.0290	0.0090	0.0075	0.0072	0.014
Nov-13	0.0300	0.0097	0.0083	0.0076	0.015
Feb-14	0.0270	0.0088	0.0075	0.0069	0.013
Apr-14	0.0270	0.0085	0.0074	0.0073	0.014
Jul-14	0.0280	0.0091	0.0079	0.0074	0.015
Nov-14	0.0270	0.0083	0.0076	0.0068	0.013
Feb-15	0.0280	0.0092	0.0079	0.0072	0.014
May-15	0.0270	0.0120	0.0077	0.0077	0.019

TEST 2
STATISTICS FOR POND 9E (WMU 9)

Arsenic

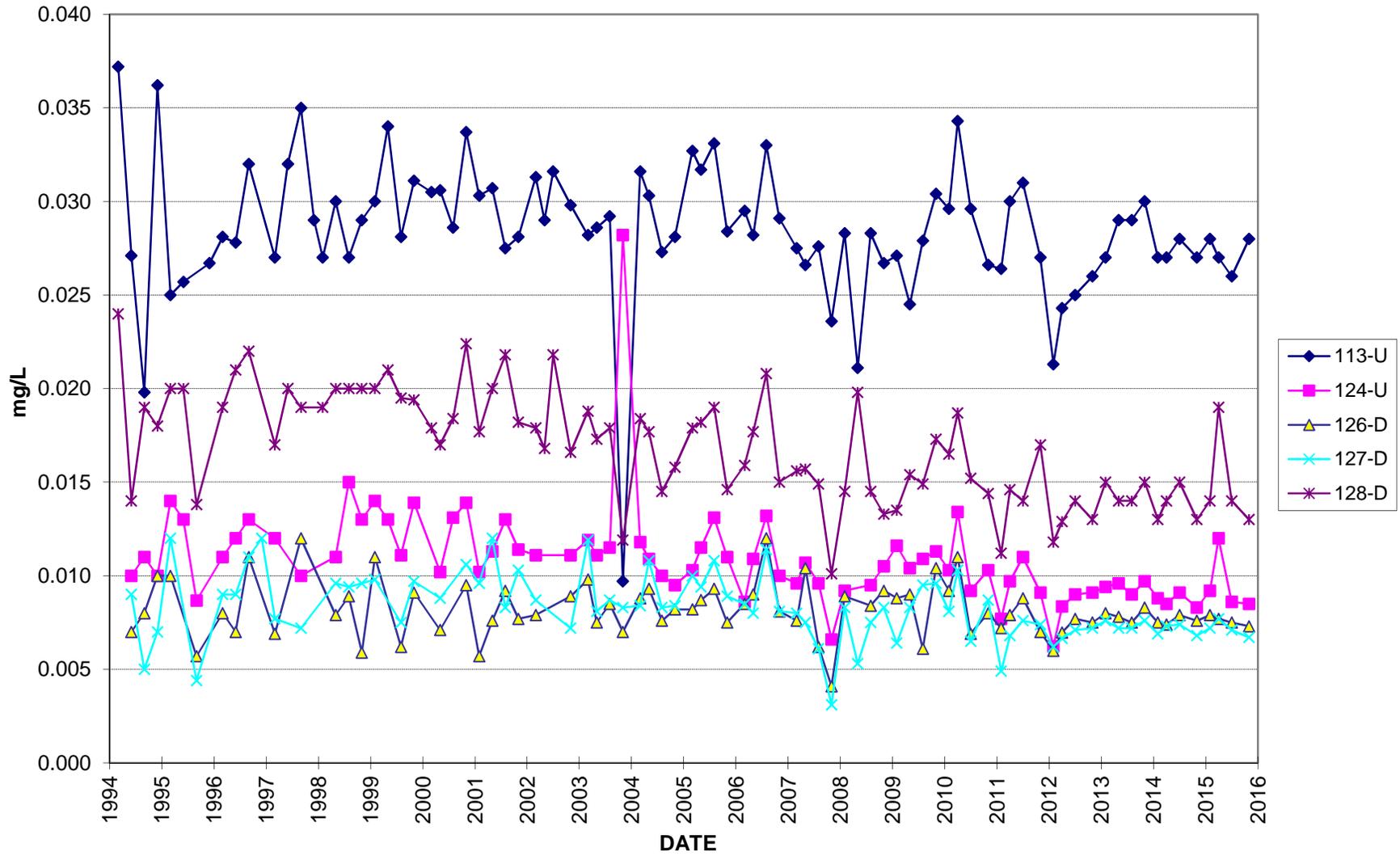
Date	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	Well 113	Well 124	Well 126	Well 127	Well 128
Jul-15	<i>0.0260</i>	<i>0.0086</i>	<i>0.0075</i>	<i>0.0071</i>	<i>0.014</i>
Nov-15	<i>0.0280</i>	<i>0.0085</i>	<i>0.0073</i>	<i>0.0067</i>	<i>0.013</i>
Test 2 Results					
	Well 113	Well 124	Well 126	Well 127	Well 128
Pre-2015 Mean	0.0291	0.0112	0.0082	0.0095	0.0176
2015 Mean	0.0273	0.0096	0.0076	0.0072	0.0150
1991-2015 Statistical Summary					
Mean	0.029	0.011	0.008	0.009	0.017
Median	0.029	0.011	0.008	0.008	0.018
Standard Deviation	0.004	0.003	0.002	0.009	0.004
Kurtosis	5.667	16.240	1.276	76.334	-0.399
Skewness	-0.857	2.918	0.643	8.563	0.386
Minimum	0.010	0.006	0.004	0.003	0.010
Maximum	0.039	0.028	0.013	0.092	0.026
Count	96	84	79	83	94

U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.

N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.

All concentrations in mg/l.

Arsenic in Groundwater (WMU 9)

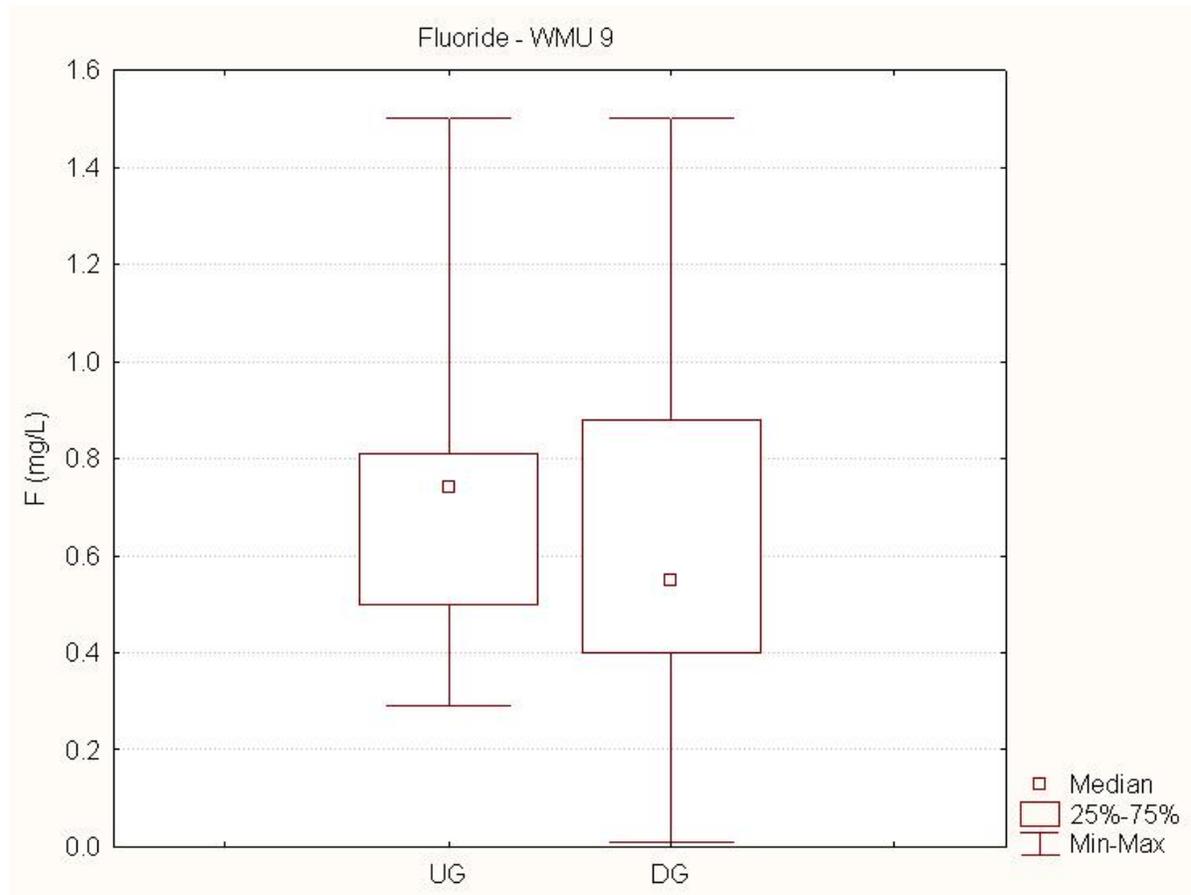


WMU 9 TEST 1 FLUORIDE

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	188	0.74	49167.5	21990.5	3.24	0.0012
Downgradient	284	0.55	62460.5			

Summary: The median fluoride concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 9E (WMU 9)

Fluoride

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Sep-91	0.8	0.7	0.8	0.2	0.2
Dec-91	0.96	0.86	0.96	0.32	0.33
Mar-92	1	0.938	1.07	0.389	0.34
Jun-92	0.772	0.757	0.842	0.249	0.275
Sep-92	0.77	0.76	0.87	0.29	0.28
Dec-92	0.8	0.8	0.9	0.3	0.3
Mar-93	0.8	0.9	0.9	0.3	0.3
Jun-93	0.8	0.8	1	0.4	0.3
Sep-93	0.8	0.8	0.8	0.3	0.3
Dec-93	0.7	0.8	0.9	0.4	0.3
Mar-94	0.8	0.8	1	0.4	0.3
Jun-94	0.76	0.846	0.96	0.38	0.324
Sep-94	0.7	0.9	0.9	0.4	0.4
Dec-94	0.8	0.806	0.9	0.4	0.3
Mar-95	0.764	0.786	0.852	0.374	0.296
Jun-95	0.704	0.864	0.878	0.38	0.308
Sep-95	0.848	0.906	0.974	0.486	0.368
Dec-95	0.612	0.806	0.836	0.418	0.322
Mar-96	U	U	0.78	0.406	U
Jun-96	0.736	0.924	0.986	0.504	0.416
Sep-96	U	U	U	U	U
Dec-96	0.62	0.81	0.87	0.42	0.33
Mar-97	0.54	0.8	0.89	0.42	0.28
Jun-97	0.62	0.79	0.88	0.45	0.28
Sep-97	0.55	0.8	0.89	0.48	0.32
Dec-97	0.54	0.76	0.84	0.44	0.3
Feb-98	0.56	0.82	0.85	0.5	0.5
May-98	0.53	0.86	0.93	0.48	0.48
Aug-98	0.53	0.84	0.94	0.47	0.47
Nov-98	0.57	0.87	0.91	0.49	0.49
Feb-99	0.54	0.82	0.93	0.51	0.35
May-99	0.5	0.89	0.84	0.49	0.32
Aug-99	0.55	0.89	0.9	0.53	0.38
Nov-99	U	U	U	U	U
Mar-00	0.56	0.88	0.95	0.57	0.39
May-00	U	U	U	U	U
Aug-00	0.41	0.89	0.94	0.4	0.27
Nov-00	0.52	0.85	0.92	0.52	0.4
Feb-01	0.46	0.76	0.84	0.47	0.34
May-01	0.47	0.73	0.9	0.79	0.37
Aug-01	0.32	0.57	0.59	0.3	0.23
Nov-01	0.46	0.77	0.88	0.62	0.43
Mar-02	0.44	0.85	0.91	0.55	0.41
May-02	0.48	0.85	0.91	0.55	0.38
Jul-02	0.51	0.86	0.96	0.56	0.44
Nov-02	0.68	0.97	0.99	0.82	0.46
Mar-03	0.56	0.93	1.1	0.64	0.02
May-03	0.48	0.83	0.92	0.58	0.42
Aug-03	0.6	0.92	1	0.57	0.47

TEST 2
STATISTICS FOR POND 9E (WMU 9)

Fluoride

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Nov-03	0.51	0.8	0.91	0.5	0.43
Mar-04	0.5	0.78	0.9	0.59	0.44
May-04	0.48	0.78	0.9	0.53	0.43
Aug-04	0.49	0.82	0.92	0.53	0.39
Nov-04	0.5	0.83	0.97	0.73	0.57
Mar-05	0.5	0.97	1.1	0.81	0.56
May-05	0.56	0.74	0.87	0.65	0.49
Aug-05	0.61	1	1.3	0.55	0.53
Nov-05	0.53	0.79	1	0.58	0.47
Feb-06	0.48	0.82	0.97	0.77	0.64
May-06	0.43	0.71	0.88	0.5	0.46
Aug-06	0.45	0.7	0.87	0.44	0.36
Nov-06	0.42	0.7	0.84	0.4	0.56
Feb-07	0.4	0.7	0.8	0.4	0.3
May-07	0.42	0.7	1	0.5	0.4
Aug-07	0.4	0.9	0.9	0.5	0.3
Nov-07	0.4	0.7	0.9	0.6	0.5
Feb-08	0.6	1	1.1	0.8	0.6
May-08	0.5	1	1.2	0.8	0.7
Aug-08	0.5	0.8	0.9	0.5	0.4
Nov-08	0.5	0.7	0.9	0.4	0.3
Feb-09	0.6	1	1.1	0.7	0.6
May-09	0.5	0.7	0.9	0.5	0.4
Aug-09	0.6	1	1.2	0.8	0.6
Nov-09	0.5	0.8	1	0.6	0.6
Feb-10	0.5	1	1	0.7	0.4
Apr-10	0.6	0.9	1	0.7	0.6
Jul-10	0.5	0.64	1	0.38	0.3
Nov-10	0.46	0.81	0.97	0.58	0.45
Feb-11	0.47	0.92	1.1	0.65	0.48
Apr-11	0.48	0.74	0.89	0.46	0.37
Jul-11	0.43	0.84	0.83	0.57	0.61
Nov-11	0.56	0.74	0.88	0.46	0.36
Feb-12	1.5	1	1.1	0.99	1.5
May-12	0.44	0.82	0.96	0.58	0.45
Aug-12	0.44	0.78	0.93	0.53	0.4
Oct-12	0.44	0.8	0.96	0.56	0.4
Feb-13	0.46	0.8	0.95	0.56	0.4
May-13	0.45	0.78	0.93	0.54	0.4
Aug-13	0.48	0.82	0.98	0.57	0.44
Nov-13	0.29	0.61	0.76	0.49	0.38
Feb-14	0.45	0.76	0.90	0.54	0.41
Apr-14	0.29	0.77	0.90	0.55	0.40
Jul-14	0.33	0.62	0.78	0.40	0.30
Nov-14	0.45	0.75	0.92	0.54	0.39
Feb-15	0.43	0.74	0.87	0.53	0.39
May-15	0.43	0.78	0.94	0.56	0.45

TEST 2
STATISTICS FOR POND 9E (WMU 9)

Fluoride

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Jul-15	<i>0.45</i>	<i>0.76</i>	<i>0.90</i>	<i>0.56</i>	<i>0.43</i>
Nov-15	<i>0.42</i>	<i>0.74</i>	<i>0.88</i>	<i>0.56</i>	<i>0.40</i>

Test 2 Results

	Well 113	Well 124	Well 126	Well 127	Well 128
Pre-2015 Mean	0.5658	0.8189	0.9303	0.5159	0.4107
2015 Mean	0.4325	0.7550	0.8975	0.5525	0.4175

1991-2015 Statistical Summary

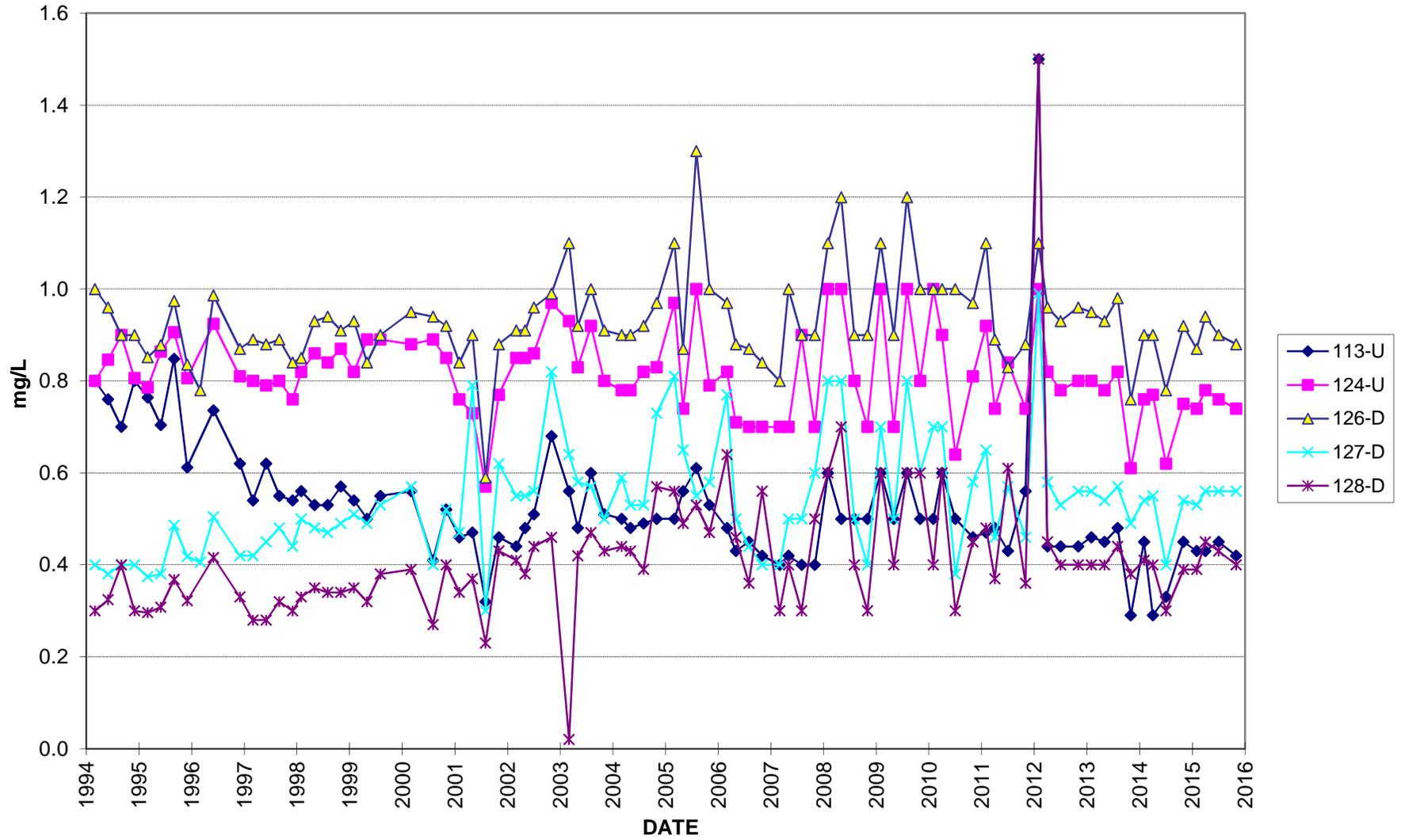
Mean	0.560	0.816	0.929	0.517	0.411
Median	0.500	0.800	0.910	0.504	0.400
Standard Deviation	0.173	0.092	0.098	0.139	0.156
Kurtosis	8.629	0.121	3.226	0.993	25.073
Skewness	2.197	0.106	0.717	0.628	3.679
Minimum	0.290	0.570	0.590	0.200	0.020
Maximum	1.500	1.000	1.300	0.990	1.500
Count	94	94	95	95	94

U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.

N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.

All concentrations in mg/l.

Fluoride in Groundwater (WMU 9)

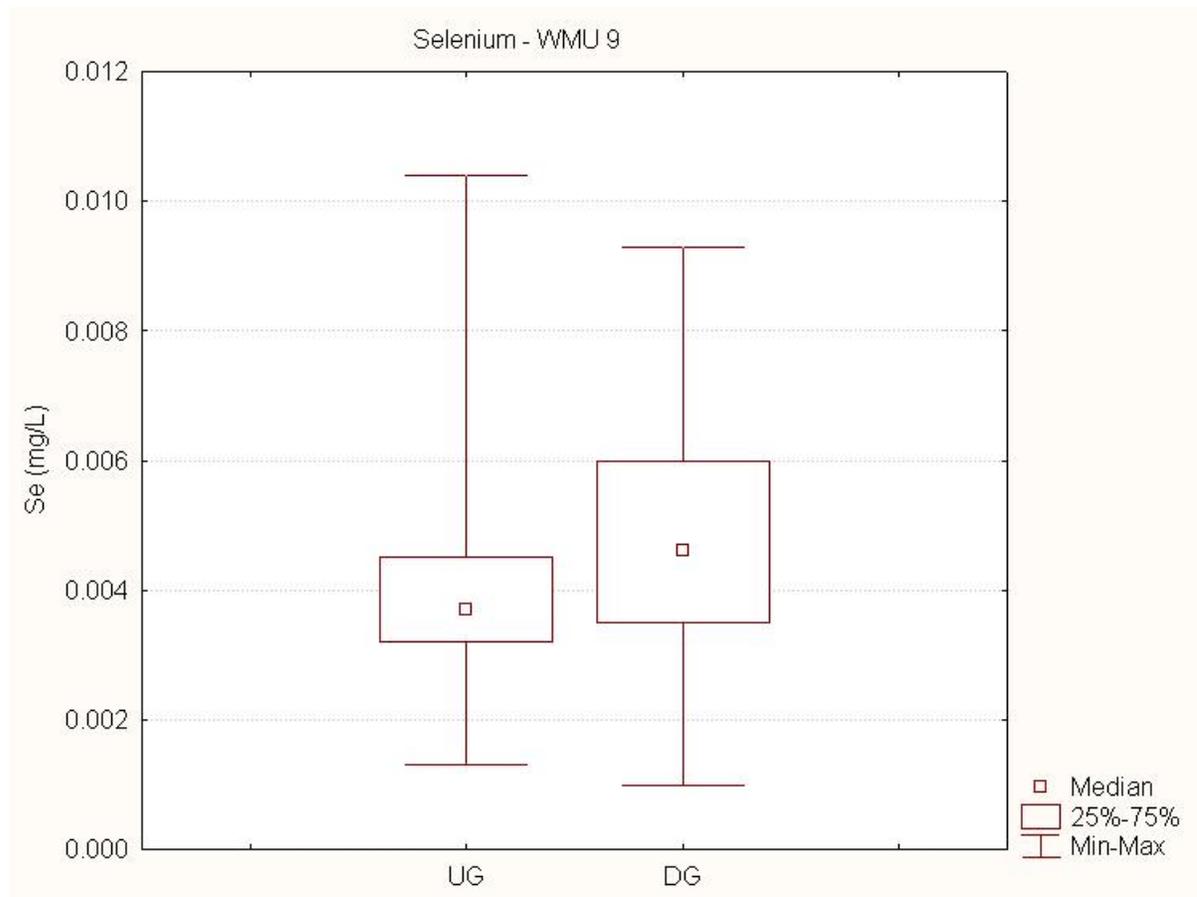


WMU 9 TEST 1 SELENIUM

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	114	0.0037	14158.5	7603.5	-4.11	<0.0001
Downgradient	186	0.0046	30991.5			

Summary: The median selenium concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 9E (WMU 9)

Selenium

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Sep-91	0.0020	0.0040	0.0040	0.0020	0.0020
Dec-91	0.0033	0.0020	0.0030	0.0020	0.0040
Mar-92	0.0020	0.0020	0.0020	0.0030	0.0020
Jun-92	U	U	U	U	U
Sep-92	U	U	U	U	U
Dec-92	U	U	U	U	U
Mar-93	0.0047	U	0.0020	0.0010	0.0010
Jun-93	0.0013	0.0020	U	U	0.0020
Sep-93	0.0023	0.0030	0.0030	0.0060	0.0020
Dec-93	U	0.0020	U	0.0070	U
Mar-94	U	U	U	U	U
Jun-94	0.0076	U	U	U	U
Sep-94	U	U	0.0040	U	0.0040
Dec-94	0.0024	U	U	U	U
Mar-95	U	U	U	U	U
Jun-95	U	0.0020	U	0.0030	U
Sep-95	U	U	0.0020	U	U
Dec-95	U	U	U	0.0030	U
Mar-96	U	U	U	U	U
Jun-96	U	U	U	U	U
Sep-96	U	U	U	0.0050	U
Dec-96	0.0036	U	U	U	U
Mar-97	0.0061	0.0047	0.0053	0.0040	0.0046
Jun-97	0.0043	U	U	U	U
Sep-97	U	0.0042	U	U	0.0057
Dec-97	0.0062	U	U	0.0062	U
Feb-98	0.0036	0.0044	U	0.0049	0.0044
May-98	U	U	U	U	U
Aug-98	U	U	0.0050	0.0075	0.0047
Nov-98	0.0040	0.0028	0.0031	0.0037	0.0039
Feb-99	0.0036	0.0036	0.0037	0.0061	0.0034
May-99	0.0041	U	U	0.0049	U
Aug-99	0.0060	U	U	U	U
Nov-99	0.0049	U	U	U	U
Mar-00	U	U	U	0.0045	U
May-00	U	U	0.0035	0.0027	0.0026
Aug-00	0.0037	U	U	0.0068	U
Nov-00	U	U	0.0049	0.0084	0.0058
Feb-01	U	U	U	U	U
May-01	0.0046	U	U	0.0061	U
Aug-01	U	0.0037	0.0033	0.0074	0.0051
Nov-01	0.0038	U	0.0034	0.0068	0.0048
Mar-02	0.0034	0.0037	U	0.0042	U
May-02	0.0057	0.0041	0.0046	0.0052	0.0036
Jul-02	0.0047	0.0026	0.0024	0.0089	0.0040
Nov-02	U	U	U	0.0035	U
Mar-03	0.0037	U	0.0037	U	0.0050
May-03	U	0.0034	U	0.0044	0.0046
Aug-03	0.0046	0.0052	0.0042	0.0057	0.0040

TEST 2
STATISTICS FOR POND 9E (WMU 9)

Selenium

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Nov-03	U	U	U	0.0040	U
Mar-04	0.0038	0.0034	U	0.0049	0.0035
May-04	0.0039	U	U	0.0065	0.0042
Aug-04	U	U	U	U	0.0026
Nov-04	U	0.0033	U	0.0038	U
Mar-05	0.0032	0.0026	U	0.0068	0.0039
May-05	0.0024	0.0049	0.0035	0.0044	0.0039
Aug-05	U	0.0040	U	0.0042	0.0032
Nov-05	0.0039	0.0070	0.0037	0.0053	0.0033
Feb-06	0.0041	U	0.0050	0.0064	0.0050
May-06	0.0037	0.0041	0.0027	0.0075	0.0060
Aug-06	0.0066	0.0061	0.0069	0.0092	0.0092
Nov-06	0.0035	0.0029	U	0.0059	0.0072
Feb-07	U	U	U	0.0047	U
May-07	0.0041	0.0055	0.0052	0.0071	0.0039
Aug-07	0.0030	U	U	U	0.0036
Nov-07	0.0052	U	U	0.0054	0.0044
Feb-08	0.0041	0.0041	U	0.0060	0.0077
May-08	U	U	U	0.0046	U
Aug-08	U	U	U	0.0069	U
Nov-08	U	0.0045	0.0049	0.0083	0.0066
Feb-09	0.0080	0.0104	U	0.0069	0.0058
May-09	U	U	0.0041	0.0075	U
Aug-09	U	0.0054	U	0.0072	0.0072
Nov-09	U	U	U	0.0044	0.0064
Feb-10	U	0.0045	U	0.0082	0.0059
Apr-10	U	U	U	0.0072	0.0043
Jul-10	0.0042	0.0056	U	0.0069	0.0054
Nov-10	U	0.0045	U	0.0071	0.0079
Feb-11	U	U	U	0.0053	U
Apr-11	0.0043	0.0071	0.0047	0.0077	0.0063
Jul-11	0.0047	0.0048	0.0054	0.0057	0.0054
Nov-11	0.0061	0.0047	0.0051	0.0093	0.0046
Feb-12	0.0019	0.0014	0.0014	0.0038	0.0027
May-12	0.0025	0.0024	0.0017	0.0045	0.0028
Aug-12	0.0033	0.0032	0.0024	0.0054	0.0044
Oct-12	0.0038	0.0032	0.0026	0.0068	0.0047
Feb-13	0.0032	0.0033	0.0023	0.0063	0.0056
May-13	0.0037	0.0034	0.0022	0.0058	0.0041
Aug-13	0.0038	0.0032	0.0026	0.0062	0.0044
Nov-13	0.0037	0.0035	0.0026	0.0068	0.0057
Feb-14	0.0033	0.0031	0.0019	0.0058	0.0044
Apr-14	0.0045	0.0032	0.0021	0.0063	0.0040
Jul-14	0.0037	0.0033	0.0027	0.0068	0.0043
Nov-14	0.0033	0.0034	0.0025	0.0065	0.0044
Feb-15	<i>0.0035</i>	<i>0.0035</i>	<i>0.0024</i>	<i>0.0065</i>	<i>0.0046</i>
May-15	<i>0.0037</i>	<i>0.0047</i>	<i>0.0024</i>	<i>0.0069</i>	<i>0.0051</i>

STATISTICS FOR POND 9E (WMU 9)

Selenium

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Jul-15	<i>0.0034</i>	<i>0.0034</i>	<i>0.0023</i>	<i>0.0059</i>	<i>0.0037</i>
Nov-15	<i>0.0034</i>	<i>0.0031</i>	<i>0.0022</i>	<i>0.0058</i>	<i>0.0038</i>
Test 2 Results					
	Well 113	Well 124	Well 126	Well 127	Well 128
Pre-2015 Mean	0.0040	0.0039	0.0035	0.0057	0.0045
2015 Mean	0.0035	0.0037	0.0023	0.0063	0.0043
1991-2015 Statistical Summary					
Mean	0.0040	0.0039	0.0034	0.0057	0.0045
Median	0.0038	0.0035	0.0031	0.0060	0.0044
Standard Deviation	0.0013	0.0015	0.0013	0.0017	0.0015
Kurtosis	1.556	5.664	-0.221	0.042	0.904
Skewness	0.893	1.746	0.679	-0.369	0.490
Minimum	0.001	0.001	0.001	0.001	0.001
Maximum	0.008	0.010	0.007	0.009	0.009
Count	60	54	46	76	64

U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.

N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.

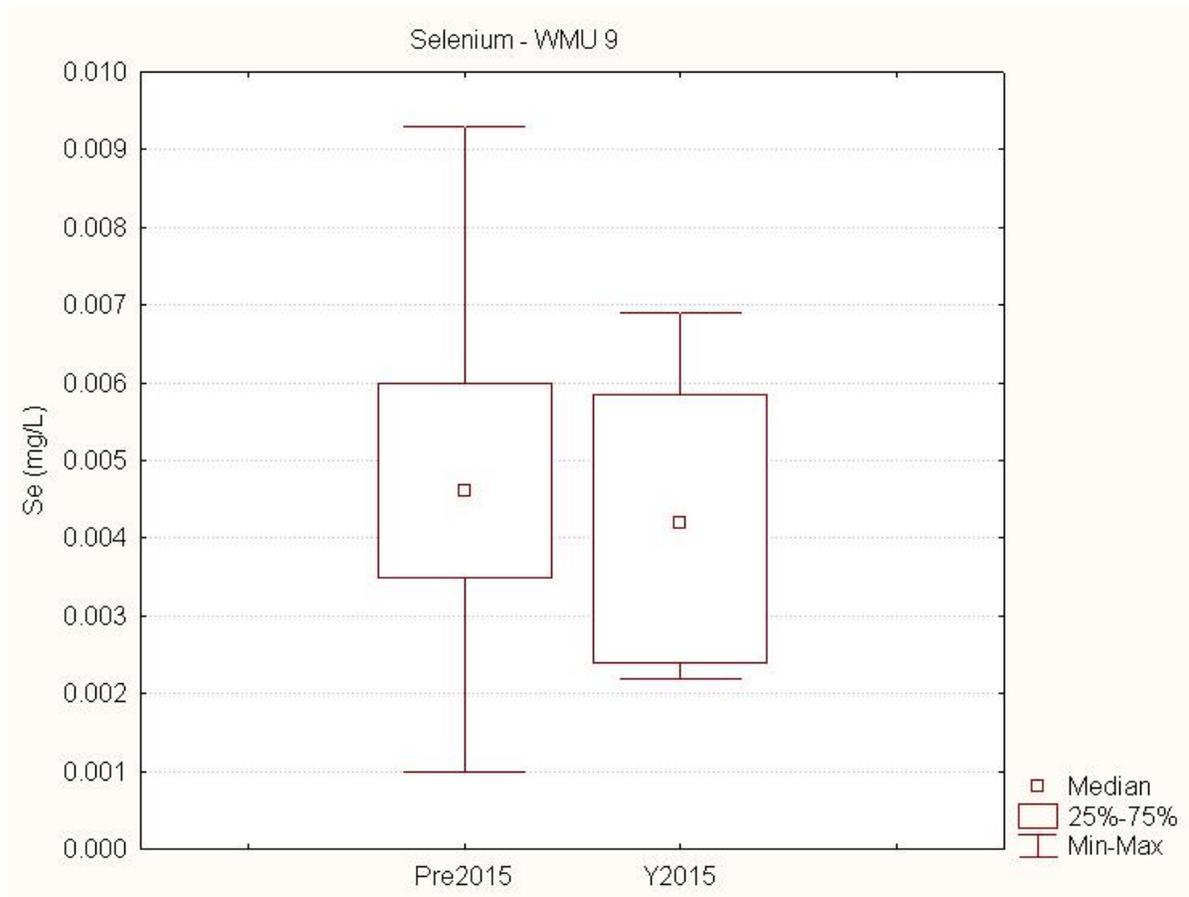
All concentrations in mg/l.

WMU 9 TEST 3 SELENIUM

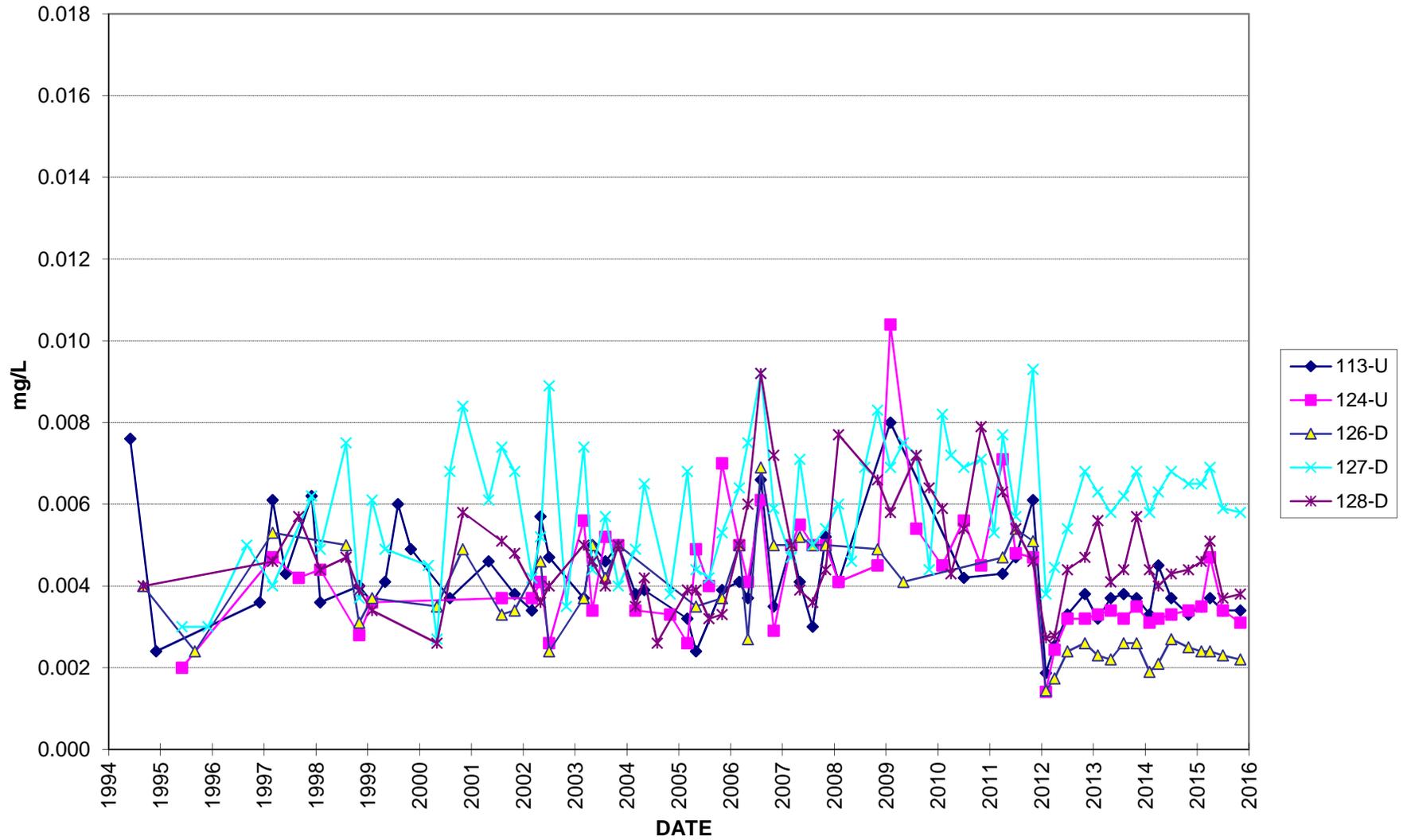
Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2015	174	0.0046	16393.0	920.0	0.69	0.49
Year 2015	12	0.0042	998.0			

Summary: For downgradient wells, the median of Pre-2015 selenium concentration is not significantly different than the median of Year 2015 selenium concentration.



Selenium in Groundwater (WMU 9)



POND 16S

Waste Management Unit 10

Note:

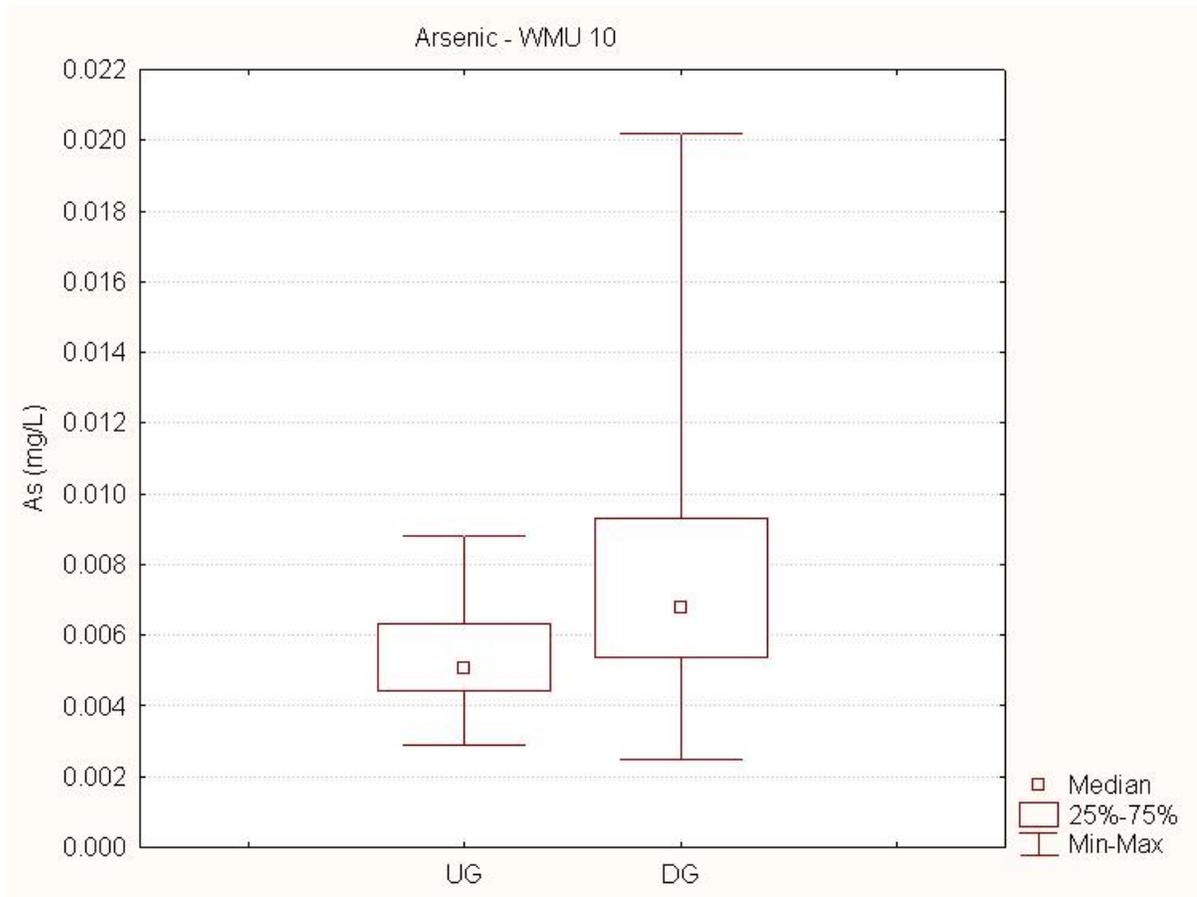
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

WMU 10 TEST 1 ARSENIC

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	76	0.0051	7791.5	4865.5	-6.16	<0.0001
Downgradient	241	0.0068	42611.5			

Summary: The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 16S (WMU 10)

Arsenic

Date	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Jun-92	N.S.	U	U	0.0183
Sep-92	N.S.	U	U	0.0126
Dec-92	U	U	U	U
Mar-93	0.0058	0.0049	0.0088	0.0161
Jun-93	0.0081	0.0063	0.0090	0.0187
Sep-93	U	U	0.0102	0.0114
Dec-93	0.0033	0.0036	0.0069	0.0130
Mar-94	0.0070	0.0054	0.0102	0.0175
Jun-94	0.0068	0.0040	0.0061	0.0095
Sep-94	0.0061	U	0.0054	0.0129
Dec-94	U	U	U	0.0179
Mar-95	0.0031	0.0049	0.0085	0.0107
Jun-95	0.0064	0.0080	0.0053	0.0152
Sep-95	U	U	0.0040	0.0078
Dec-95	0.0029	0.0117	0.0050	0.0202
Mar-96	U	0.0084	0.0095	0.0065
Jun-96	0.0088	U	0.0065	0.0090
Sep-96	U	0.0058	0.0120	0.0140
Dec-96	U	U	U	U
Mar-97	0.0050	0.0025	0.0066	0.0130
Jun-97	U	U	U	0.0140
Sep-97	0.0058	0.0047	0.0075	0.0080
Dec-97	U	U	U	U
Feb-98	U	U	U	U
May-98	0.0078	0.0047	0.0090	0.0120
Aug-98	0.0086	0.0053	0.0088	0.0120
Nov-98	0.0065	0.0031	0.0085	0.0150
Feb-99	0.0048	0.0054	0.0087	0.0150
May-99	0.0068	U	U	0.0140
Aug-99	0.0062	0.0033	0.0063	0.0122
Nov-99	0.0068	0.0060	0.0089	0.0130
Mar-00	U	U	U	U
May-00	0.0073	0.0027	0.0057	0.0112
Aug-00	0.0070	U	U	U
Nov-00	0.0087	0.0067	0.0087	0.0143
Feb-01	0.0064	0.0052	0.0046	0.0134
May-01	0.0045	0.0047	0.0088	0.0097
Aug-01	0.0055	0.0046	0.0070	0.0112
Nov-01	0.0062	0.0034	0.0085	0.0146
Mar-02	0.0052	0.0050	0.0068	0.0139
May-02	0.0049	0.0034	U	0.0101
Jul-02	0.0051	U	0.0114	0.0130
Nov-02	0.0045	0.0045	0.0070	0.0107
Mar-03	U	U	U	U
May-03	0.0045	0.0042	0.0073	0.0097
Aug-03	0.0064	0.0055	U	0.0101
Nov-03	0.0030	0.0069	0.0051	0.0102
Mar-04	0.0063	0.0060	0.0071	0.0106

TEST 2
STATISTICS FOR POND 16S (WMU 10)

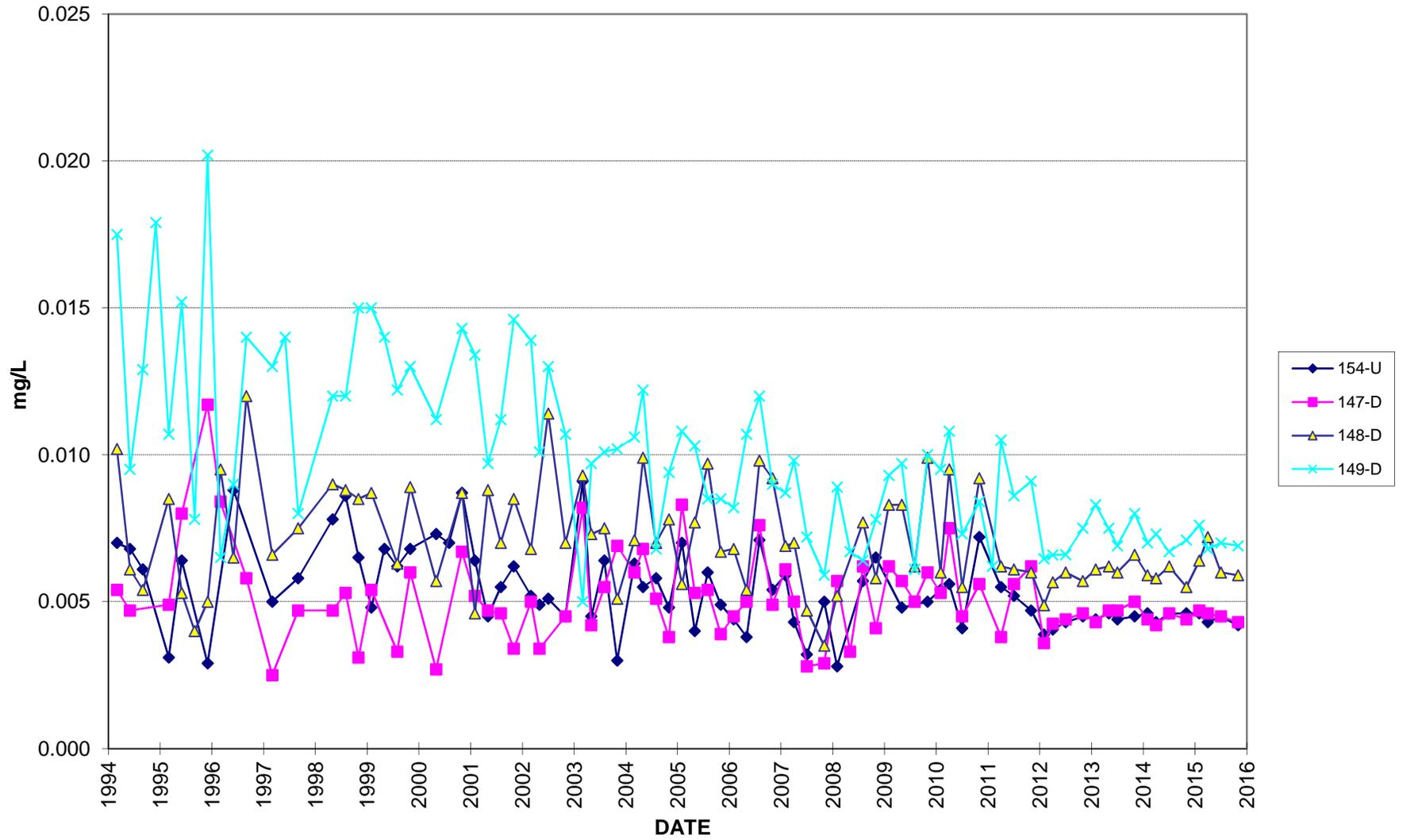
Arsenic

<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
May-04	0.0055	0.0068	0.0099	0.0122
Aug-04	0.0058	0.0051	0.0070	0.0068
Nov-04	0.0048	0.0038	0.0078	0.0094
Feb-05	0.0070	0.0083	0.0056	0.0108
May-05	0.0040	0.0053	0.0077	0.0103
Aug-05	0.0060	0.0054	0.0097	0.0085
Nov-05	0.0049	0.0039	0.0067	0.0085
Feb-06	0.0044	0.0045	0.0068	0.0082
May-06	0.0038	U	0.0054	0.0107
Aug-06	0.0071	0.0076	0.0098	0.0120
Nov-06	0.0054	0.0049	0.0092	0.0090
Feb-07	0.0059	0.0061	0.0069	0.0087
May-07	0.0043	0.0050	0.0070	0.0098
Aug-07	0.0032	0.0028	0.0047	0.0072
Nov-07	U	0.0029	0.0035	0.0059
Feb-08	U	U	U	U
May-08	U	0.0033	U	0.0067
Aug-08	0.0057	0.0062	0.0077	0.0064
Nov-08	0.0065	0.0041	0.0058	0.0078
Feb-09	U	0.0062	0.0083	0.0093
May-09	0.0048	0.0057	0.0083	0.0097
Aug-09	U	0.0050	0.0062	0.0061
Nov-09	0.0050	0.0060	0.0099	0.0100
Feb-10	0.0054	0.0053	0.0060	0.0095
May-10	0.0056	0.0075	0.0095	0.0108
Aug-10	0.0041	0.0045	0.0055	0.0073
Nov-10	0.0072	0.0056	0.0092	0.0084
Feb-11	0.0050	0.0050	U	0.0062
Apr-11	0.0055	0.0038	0.0062	0.0105
Jul-11	0.0052	0.0056	0.0061	0.0086
Nov-11	0.0047	0.0062	0.0060	0.0091
Feb-12	0.0039	0.0036	0.0049	0.0065
May-12	0.0041	0.0043	0.0057	0.0066
Aug-12	0.0043	0.0044	0.0060	0.0066
Oct-12	0.0045	0.0046	0.0057	0.0075
Feb-13	0.0044	0.0043	0.0061	0.0083
May-13	0.0046	0.0047	0.0062	0.0075
Jul-13	0.0044	0.0047	0.0060	0.0069
Nov-13	0.0045	0.0050	0.0066	0.0080
Feb-14	0.0046	0.0044	0.0059	0.0070
Apr-14	0.0043	0.0042	0.0058	0.0073
Jul-14	0.0046	0.0046	0.0062	0.0067
Nov-14	0.0046	0.0044	0.0055	0.0071
Feb-15	0.0046	0.0047	0.0064	0.0076
May-15	0.0043	0.0046	0.0072	0.0068
Jul-15	0.0045	0.0045	0.0060	0.0070
Nov-15	0.0042	0.0043	0.0059	0.0069

TEST 2
STATISTICS FOR POND 16S (WMU 10)

Arsenic				
<u>Date</u>	Upgradient Well <u>Well 154</u>	<u>Well 147</u>	Downgradient Wells	
			<u>Well 148</u>	<u>Well 149</u>
Test 2 Results				
	Well 154	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Pre-2015 Mean	0.0055	0.0051	0.0073	0.0107
2015 Mean	0.0045	0.0044	0.0059	0.0070
1991-2015 Statistical Summary				
Mean	0.005	0.005	0.007	0.011
Median	0.005	0.005	0.007	0.010
Standard Deviation	0.001	0.002	0.002	0.003
Kurtosis	-0.078	4.305	-0.361	0.224
Skewness	0.473	1.416	0.448	0.819
Minimum	0.003	0.003	0.004	0.006
Maximum	0.009	0.012	0.012	0.020
Count	72	72	74	83
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.				
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.				
All concentrations in mg/l.				

Arsenic in Groundwater (WMU 10)

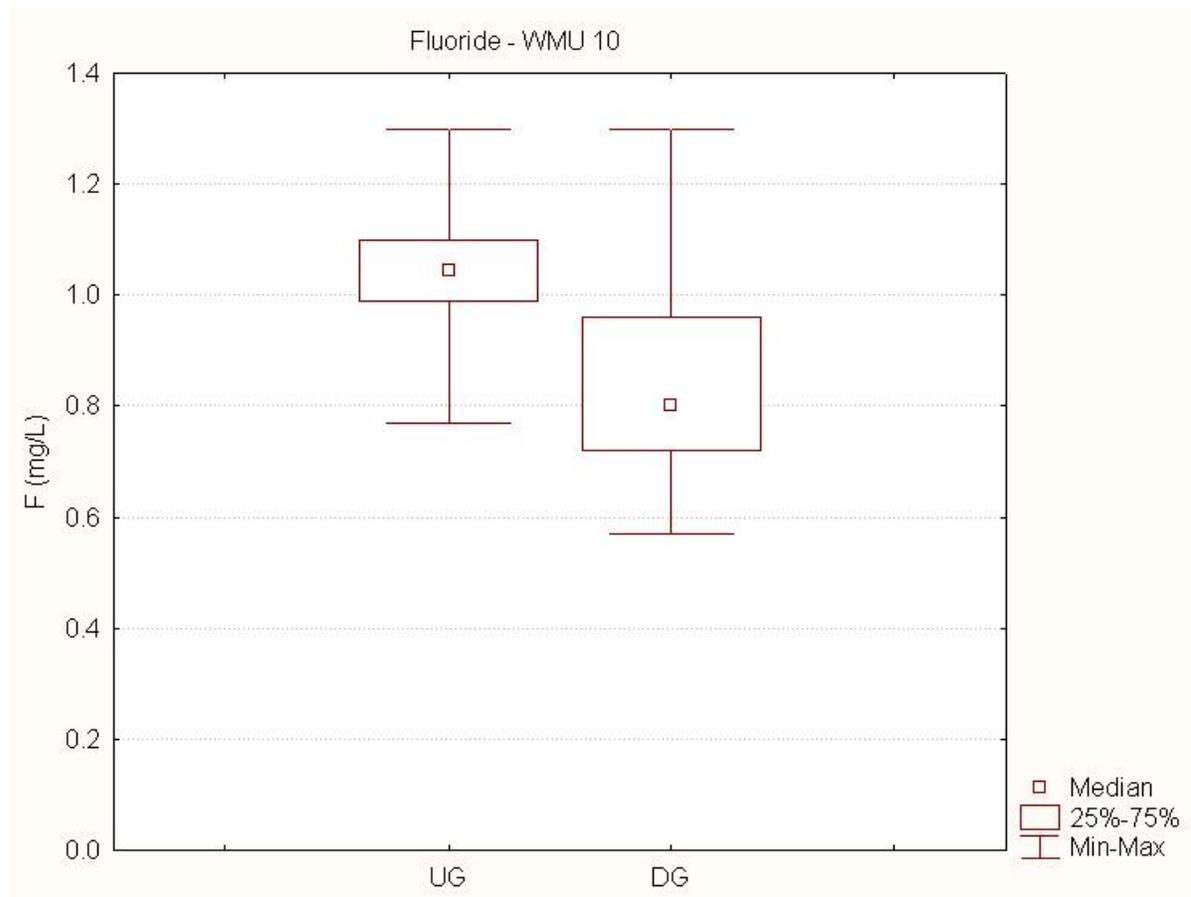


WMU 10 TEST 1 FLUORIDE

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	92	1.05	26176.0	3586.0	10.33	<0.0001
Downgradient	277	0.800	42089.0			

Summary: The median fluoride concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 16S (WMU 10)

Fluoride

Date	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Jun-92	N.S.	0.778	0.731	1.02
Sep-92	N.S.	0.73	1	1.2
Dec-92	1.2	0.8	0.8	1.1
Mar-93	1.2	0.8	0.8	1.1
Jun-93	1.1	0.8	0.8	1.1
Sep-93	0.9	0.6	0.6	0.9
Dec-93	1.2	0.8	0.8	0.9
Mar-94	1.3	0.8	0.9	1
Jun-94	1.1	0.7	0.7	1
Sep-94	1.1	0.8	0.8	1.1
Dec-94	1.08	0.92	0.8	1.1
Mar-95	1.15	0.806	0.786	0.892
Jun-95	1.19	0.756	0.734	1.1
Sep-95	1.19	0.822	0.812	1.04
Dec-95	0.91	0.606	0.622	0.802
Mar-96	0.936	0.774	0.722	1.25
Jun-96	1.11	0.792	0.87	1.07
Sep-96	1.2	U	U	1.1
Dec-96	1.06	0.71	0.72	0.95
Mar-97	1.04	0.68	0.76	0.9
Jun-97	1.03	0.68	0.7	0.92
Sep-97	0.97	0.7	0.72	0.93
Dec-97	1.01	0.64	0.68	0.74
Feb-98	1.08	0.69	0.73	0.97
May-98	1.08	0.67	0.68	0.92
Aug-98	1.05	0.69	0.68	0.92
Nov-98	1.21	0.73	0.75	1.01
Feb-99	1.04	0.71	0.75	1.01
May-99	1.14	0.68	0.71	0.93
Aug-99	1.10	0.73	0.74	1.00
Nov-99	U	U	U	U
Mar-00	1.10	0.75	0.79	1.00
May-00	1.10	U	U	U
Aug-00	1.10	0.77	0.64	1.00
Nov-00	1.10	0.73	0.76	1.00
Feb-01	0.99	0.64	0.68	0.90
May-01	1.00	0.8	0.6	0.97
Aug-01	1.00	0.64	0.92	0.72
Nov-01	1.10	0.69	0.73	0.94
Mar-02	1.10	0.71	0.76	1.10
May-02	1.10	0.72	0.74	1.00
Jul-02	1.10	0.73	0.79	1.00
Nov-02	1.10	0.94	0.97	1.00
Mar-03	1.00	0.73	0.73	0.98
May-03	1.00	0.71	0.76	1.00
Aug-03	1.00	0.77	0.88	1.20
Nov-03	1.00	0.73	0.77	1.00
Mar-04	1.00	0.74	0.76	1.00

TEST 2
STATISTICS FOR POND 16S (WMU 10)

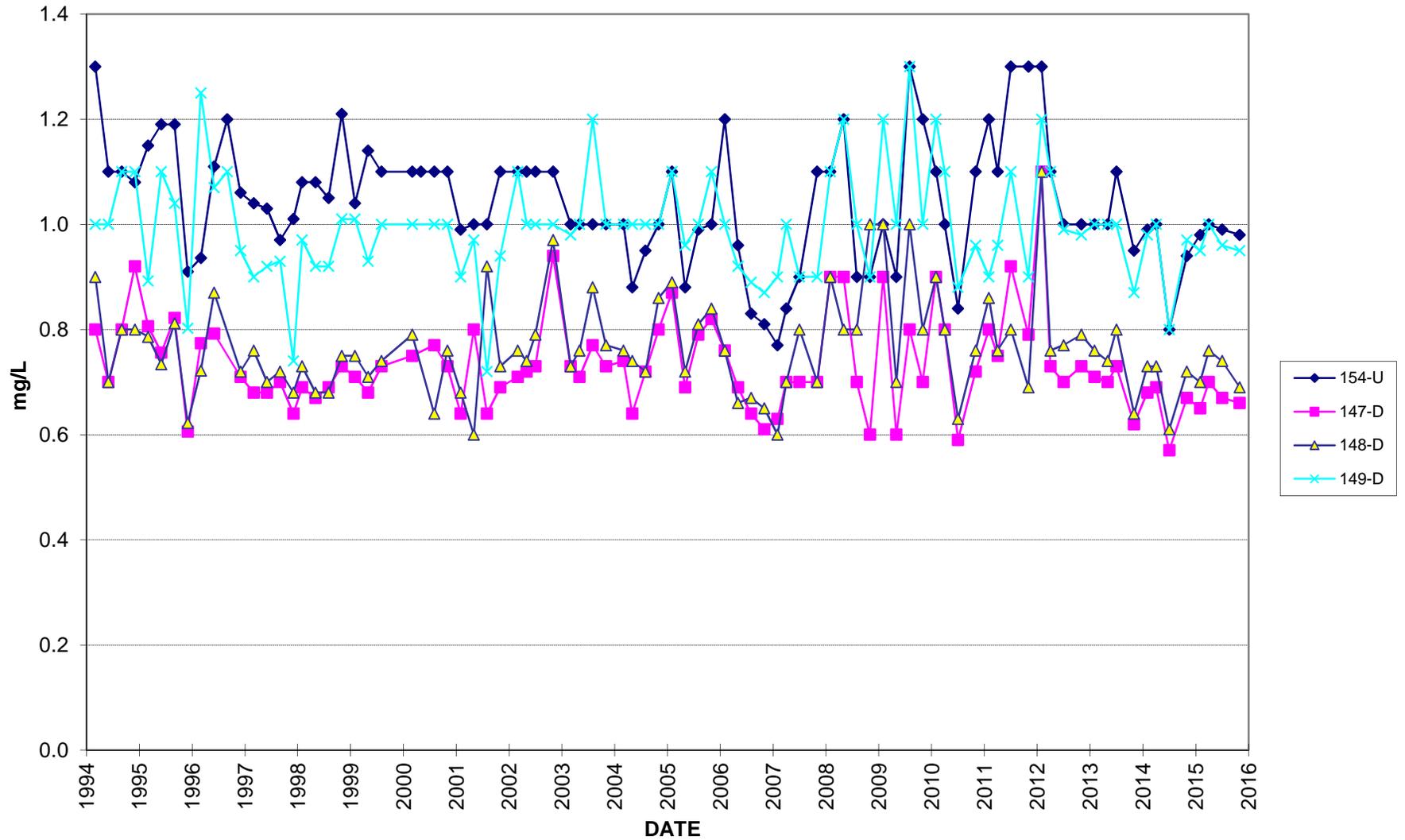
Fluoride

Date	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
May-04	0.88	0.64	0.74	1.00
Aug-04	0.95	0.72	0.72	1.00
Nov-04	1.00	0.8	0.86	1.00
Feb-05	1.10	0.87	0.89	1.10
May-05	0.88	0.69	0.72	0.96
Aug-05	0.99	0.79	0.81	1.00
Nov-05	1.00	0.82	0.84	1.10
Feb-06	1.2	0.76	0.76	1
May-06	0.96	0.69	0.66	0.92
Aug-06	0.83	0.64	0.67	0.89
Nov-06	1.2	0.61	0.65	0.87
Feb-07	0.77	0.63	0.6	0.9
May-07	0.84	0.7	0.7	1
Aug-07	0.9	0.7	0.8	0.9
Nov-07	1.1	0.7	0.7	0.9
Feb-08	1.1	0.9	0.9	1.1
May-08	1.2	0.9	0.8	1.2
Aug-08	0.9	0.7	0.8	1
Nov-08	0.9	0.6	1	0.9
Feb-09	1	0.9	1	1.2
May-09	0.9	0.6	0.7	1
Aug-09	1.3	0.8	1	1.3
Nov-09	1.2	0.7	0.8	1
Feb-10	1.1	0.9	0.9	1.2
May-10	1	0.8	0.8	1.1
Aug-10	0.84	0.59	0.63	0.88
Nov-10	1.1	0.72	0.76	0.96
Feb-11	1.2	0.8	0.86	0.9
Apr-11	1.1	0.75	0.76	0.96
Jul-11	1.3	0.92	0.8	1.1
Nov-11	1.3	0.79	0.69	0.9
Feb-12	1.3	1.1	1.1	1.2
May-12	1.1	0.73	0.76	1.1
Aug-12	1	0.7	0.77	0.99
Oct-12	1	0.73	0.79	0.98
Feb-13	1	0.71	0.76	1
May-13	1	0.7	0.74	1
Jul-13	1.1	0.73	0.8	1
Nov-13	0.95	0.62	0.64	0.87
Feb-14	0.99	0.68	0.73	0.98
Apr-14	1.00	0.69	0.73	1.00
Jul-14	0.80	0.57	0.61	0.80
Nov-14	0.94	0.67	0.72	0.97
Feb-15	0.98	0.65	0.70	0.95
May-15	1.00	0.70	0.76	1.00
Jul-15	0.99	0.67	0.74	0.96
Nov-15	0.98	0.66	0.69	0.95

TEST 2
STATISTICS FOR POND 16S (WMU 10)

Fluoride				
Date	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Test 2 Results				
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Pre-2015 Mean	1.0602	0.7422	0.7721	1.0019
2015 Mean	0.9325	0.6525	0.6975	0.9375
1991-2015 Statistical Summary				
Mean	1.054	0.738	0.769	0.999
Median	1.070	0.730	0.760	1.000
Standard Deviation	0.119	0.090	0.098	0.106
Kurtosis	-0.217	2.186	1.301	0.696
Skewness	0.010	0.982	0.912	0.299
Minimum	0.770	0.570	0.600	0.720
Maximum	1.300	1.100	1.100	1.300
Count	88	88	88	89
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.				
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.				
All concentrations in mg/l.				

Fluoride in Groundwater (WMU 10)

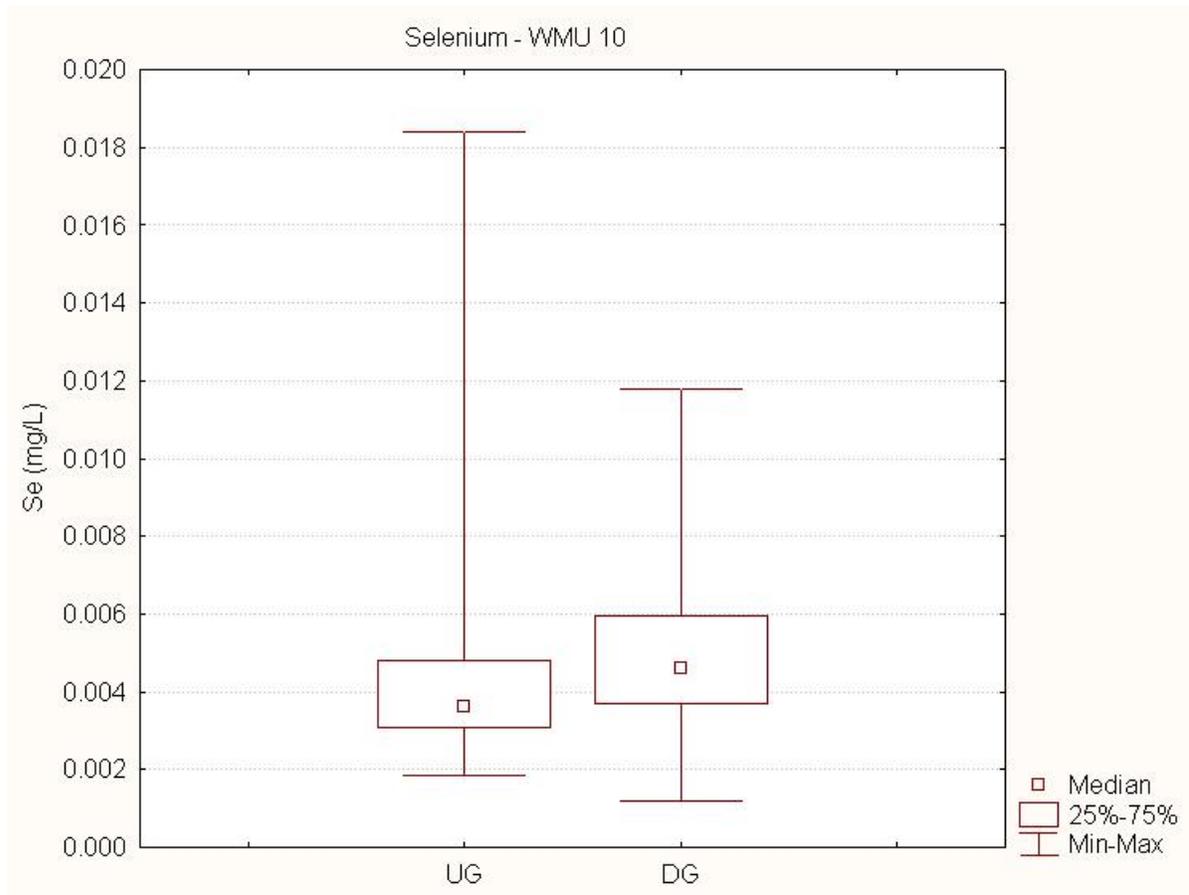


WMU 10 TEST 1 SELENIUM

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	45	0.0036	4234.5	3199.5	-2.36	0.018
Downgradient	184	0.0046	22100.5			

Summary: The median selenium concentration of downgradient (DG) wells is significantly higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 16S (WMU 10)

Date	Upgradient Well		Downgradient Wells	
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Jun-92	N.S.	U	0.0083	U
Sep-92	N.S.	U	U	U
Dec-92	U	U	U	U
Mar-93	0.0023	0.0031	0.0050	U
Jun-93	U	0.0027	0.0015	U
Sep-93	U	0.0051	0.0039	U
Dec-93	U	U	U	U
Mar-94	U	U	U	U
Jun-94	U	0.0050	0.0056	U
Sep-94	U	U	U	U
Dec-94	U	0.0035	0.0029	U
Mar-95	U	0.0032	0.0024	U
Jun-95	U	U	U	U
Sep-95	0.0184	0.0068	0.0045	U
Dec-95	U	0.0027	U	U
Mar-96	U	U	U	U
Jun-96	U	U	U	U
Sep-96	U	0.0060	0.0040	0.0030
Dec-96	U	0.0063	0.0038	0.0035
Mar-97	0.0042	0.0047	0.0073	U
Jun-97	0.0046	0.0049	U	U
Sep-97	U	0.0073	0.0048	0.0059
Dec-97	0.0047	0.0072	0.0047	0.0037
Feb-98	0.0032	0.0044	0.0043	0.0030
May-98	U	U	U	U
Aug-98	0.0067	0.0060	0.0066	U
Nov-98	U	0.0058	U	0.0036
Feb-99	U	0.0051	0.0050	U
May-99	U	0.0048	0.0035	U
Aug-99	U	U	U	U
Nov-99	U	0.0057	U	U
Mar-00	U	0.0053	0.0061	0.0032
May-00	U	0.0038	0.0066	U
Aug-00	U	0.0060	0.0036	U
Nov-00	U	0.0057	0.0070	0.0045
Feb-01	U	0.0065	0.0049	U
May-01	U	0.0053	0.0065	U
Aug-01	U	U	U	U
Nov-01	U	0.0068	U	0.0045
Mar-02	U	0.0058	0.0046	U
May-02	U	0.0042	0.0038	0.0024
Jul-02	U	0.0060	0.0068	U
Nov-02	U	0.0039	0.0040	U
Mar-03	U	0.0050	0.0050	U
May-03	0.0036	U	U	0.0043
Aug-03	U	0.0066	0.0044	0.0049
Nov-03	U	0.0071	U	U
Mar-04	0.0034	0.0036	0.0034	0.0034

TEST 2
STATISTICS FOR POND 16S (WMU 10)

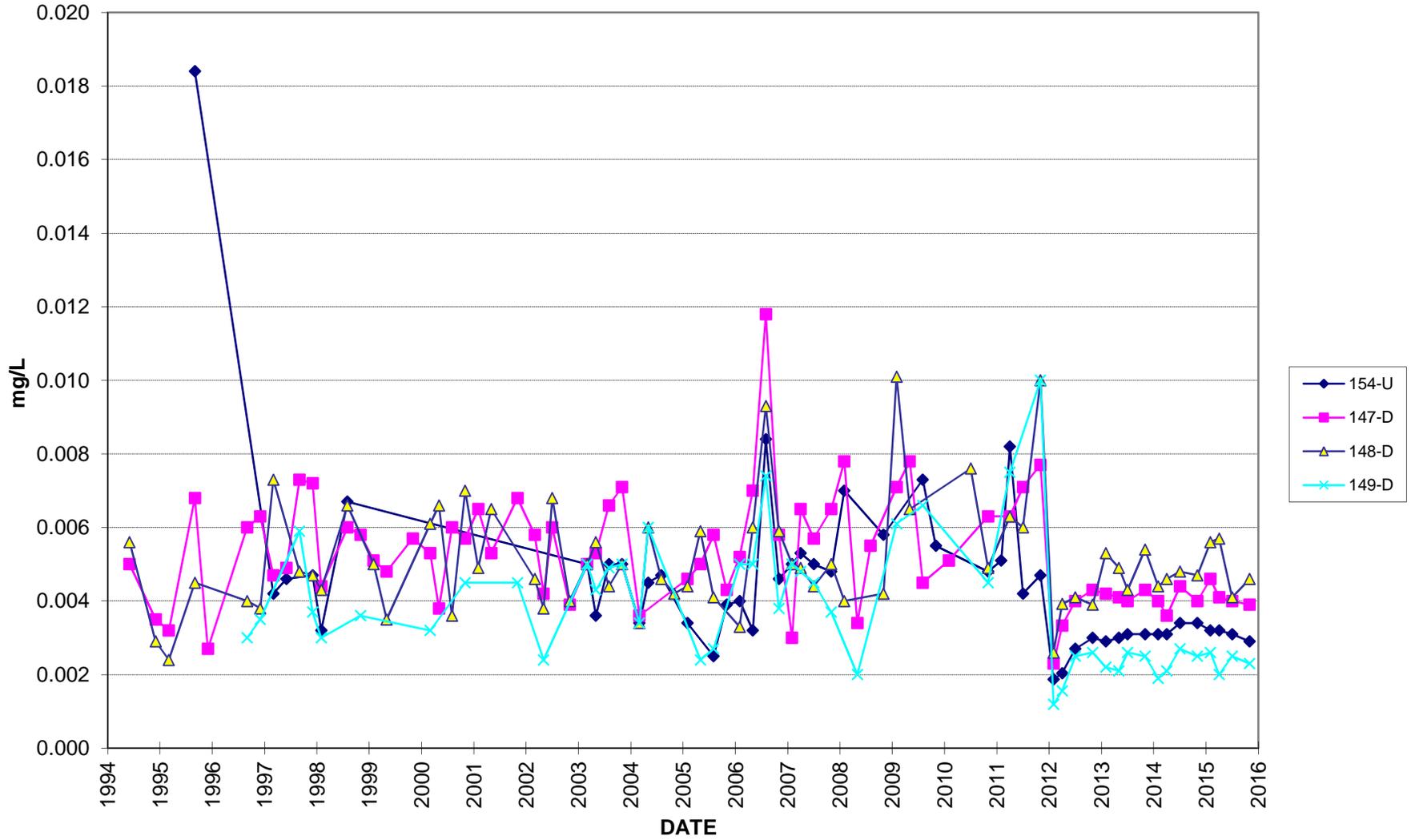
Selenium

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
May-04	0.0045	U	0.0060	0.0060
Aug-04	0.0047	U	0.0046	U
Nov-04	U	U	0.0042	U
Feb-05	0.0034	0.0046	0.0044	U
May-05	U	0.0050	0.0059	0.0024
Aug-05	0.0025	0.0058	0.0041	0.0027
Nov-05	0.0039	0.0043	U	U
Feb-06	0.0040	0.0052	0.0033	U
May-06	0.0032	0.0070	0.0060	U
Aug-06	0.0084	0.0118	0.0093	0.0074
Nov-06	0.0046	0.0058	0.0059	0.0038
Feb-07	U	0.0030	U	U
May-07	0.0053	0.0065	0.0049	0.0048
Aug-07	U	0.0057	0.0044	0.0045
Nov-07	0.0048	0.0065	U	0.0037
Feb-08	0.0070	0.0078	0.0040	U
May-08	U	0.0034	U	0.0020
Aug-08	U	0.0055	U	U
Nov-08	0.0058	U	0.0042	U
Feb-09	U	0.0071	0.0101	0.0061
May-09	U	0.0078	0.0065	U
Aug-09	0.0073	0.0045	U	0.0066
Nov-09	0.0055	U	U	U
Feb-10	U	0.0051	U	U
May-10	U	U	U	U
Aug-10	U	U	0.0076	U
Nov-10	0.0048	0.0063	0.0049	0.0045
Feb-11	0.0051	U	U	U
Apr-11	0.0082	0.0063	0.0063	0.0075
Jul-11	0.0042	0.0071	0.0060	U
Nov-11	0.0047	0.0077	0.0100	0.0100
Feb-12	0.0019	0.0023	0.0026	0.0012
May-12	0.0020	0.0033	0.0039	0.0016
Aug-12	0.0027	0.0040	0.0041	0.0025
Oct-12	0.0030	0.0043	0.0039	0.0026
Feb-13	0.0029	0.0042	0.0053	0.0022
May-13	0.0030	0.0041	0.0049	0.0021
Jul-13	0.0031	0.0040	0.0043	0.0026
Nov-13	0.0031	0.0043	0.0054	0.0025
Feb-14	0.0031	0.0040	0.0044	0.0019
Apr-14	0.0031	0.0036	0.0046	0.0021
Jul-14	0.0034	0.0044	0.0048	0.0027
Nov-14	0.0034	0.0040	0.0047	0.0025
Feb-15	<i>0.0032</i>	<i>0.0046</i>	<i>0.0056</i>	<i>0.0026</i>
May-15	<i>0.0032</i>	<i>0.0041</i>	<i>0.0057</i>	<i>0.0020</i>
Jul-15	<i>0.0031</i>	<i>0.0040</i>	<i>0.0041</i>	<i>0.0025</i>
Nov-15	<i>0.0029</i>	<i>0.0039</i>	<i>0.0046</i>	<i>0.0023</i>

TEST 2
STATISTICS FOR POND 16S (WMU 10)

Selenium				
<u>Date</u>	Upgradient Well	Downgradient Wells		
Test 2 Results	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Pre-2015 Mean	0.0047	0.0053	0.0051	0.0040
2015 Mean	0.0033	0.0040	0.0046	0.0023
1991-2015 Statistical Summary				
Mean	0.005	0.005	0.005	0.004
Median	0.004	0.005	0.005	0.003
Standard Deviation	0.003	0.002	0.002	0.002
Kurtosis	16.689	2.793	1.668	1.881
Skewness	3.536	0.929	1.023	1.310
Minimum	0.002	0.002	0.002	0.001
Maximum	0.018	0.012	0.010	0.010
Count	41	70	63	39
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.</p>				

Selenium in Groundwater (WMU 10)



POND 17

Waste Management Unit 14

Note:

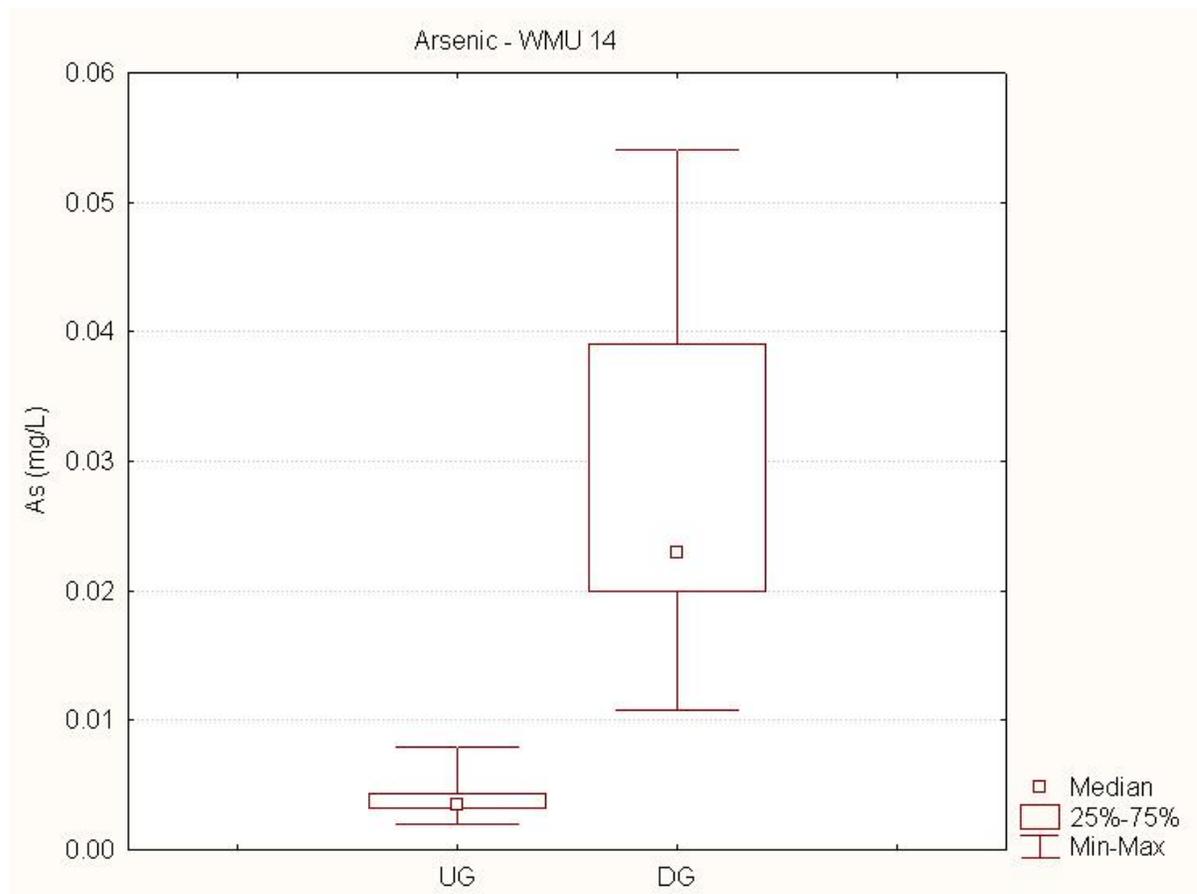
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

WMU 14 TEST 1 ARSENIC

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	59	0.0039	1770.0	0.00	11.80	<0.0001
Downgradient	222	0.023	37851.0			

Summary: The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 17 (WMU 14)

Arsenic

<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
Mar-97	N.S.	0.017	N.S.	N.S.
Jun-97	N.S.	0.025	N.S.	N.S.
Sep-97	N.S.	0.017	0.019	0.035
Dec-97	N.S.	U	0.022	0.035
Feb-98	N.S.	0.021	0.024	0.041
May-98	N.S.	0.021	0.023	0.043
Aug-98	N.S.	0.021	0.026	0.054
Nov-98	0.003	0.020	0.026	0.052
Feb-99	0.0049	0.018	0.026	0.050
May-99	U	0.020	0.024	0.052
Aug-99	0.005	0.019	0.024	0.0486
Nov-99	0.0064	0.0198	0.0247	0.0426
Mar-00	U	0.0189	0.0236	0.0462
May-00	0.0028	0.0181	0.0236	0.0497
Aug-00	0.004	0.0185	0.0229	0.0491
Nov-00	0.006	0.0234	0.0291	0.0477
Feb-01	0.0066	0.0202	0.0247	0.0523
May-01	U	0.0215	0.0241	0.0436
Aug-01	0.0034	0.0182	0.0217	0.042
Nov-01	0.0038	0.02	0.0228	0.0449
Mar-02	0.0042	0.0191	0.0219	0.0452
May-02	0.0033	0.0179	0.0205	0.0426
Jul-02	0.002	0.0188	0.0238	0.0434
Nov-02	0.0035	0.0174	0.0222	0.0421
Mar-03	U	U	0.0247	0.0462
May-03	0.0034	0.0206	0.0232	0.0433
Aug-03	0.0044	0.021	0.0249	0.0452
Nov-03	0.0025	0.0175	0.0205	0.0407
Mar-04	0.0039	0.0209	0.0268	0.0465
May-04	0.0044	0.0211	0.0261	0.0457
Aug-04	U	0.0202	0.0233	0.0417
Nov-04	0.0029	0.019	0.0229	0.0426
Mar-05	0.005	0.021	0.025	0.0455
May-05	0.0033	0.0205	0.0242	0.0461
Aug-05	0.004	0.0222	0.0261	0.0447
Nov-05	0.0044	0.0185	0.0206	0.0436
Feb-06	0.0026	0.0178	0.0229	0.0412
May-06	0.004	0.0186	0.0228	0.0484
Aug-06	0.008	0.0221	0.0269	0.0469
Nov-06	0.0047	0.019	0.0226	0.0434
Feb-07	0.0036	0.0183	0.0206	0.0434
May-07	0.0039	0.0193	0.0224	0.0433
Aug-07	U	0.0186	0.0213	0.0418
Nov-07	U	0.0108	0.0185	0.0391
Feb-08	U	0.0174	0.0232	0.0363
May-08	0.0028	0.0267	0.0323	0.0453

TEST 2
STATISTICS FOR POND 17 (WMU 14)

Arsenic

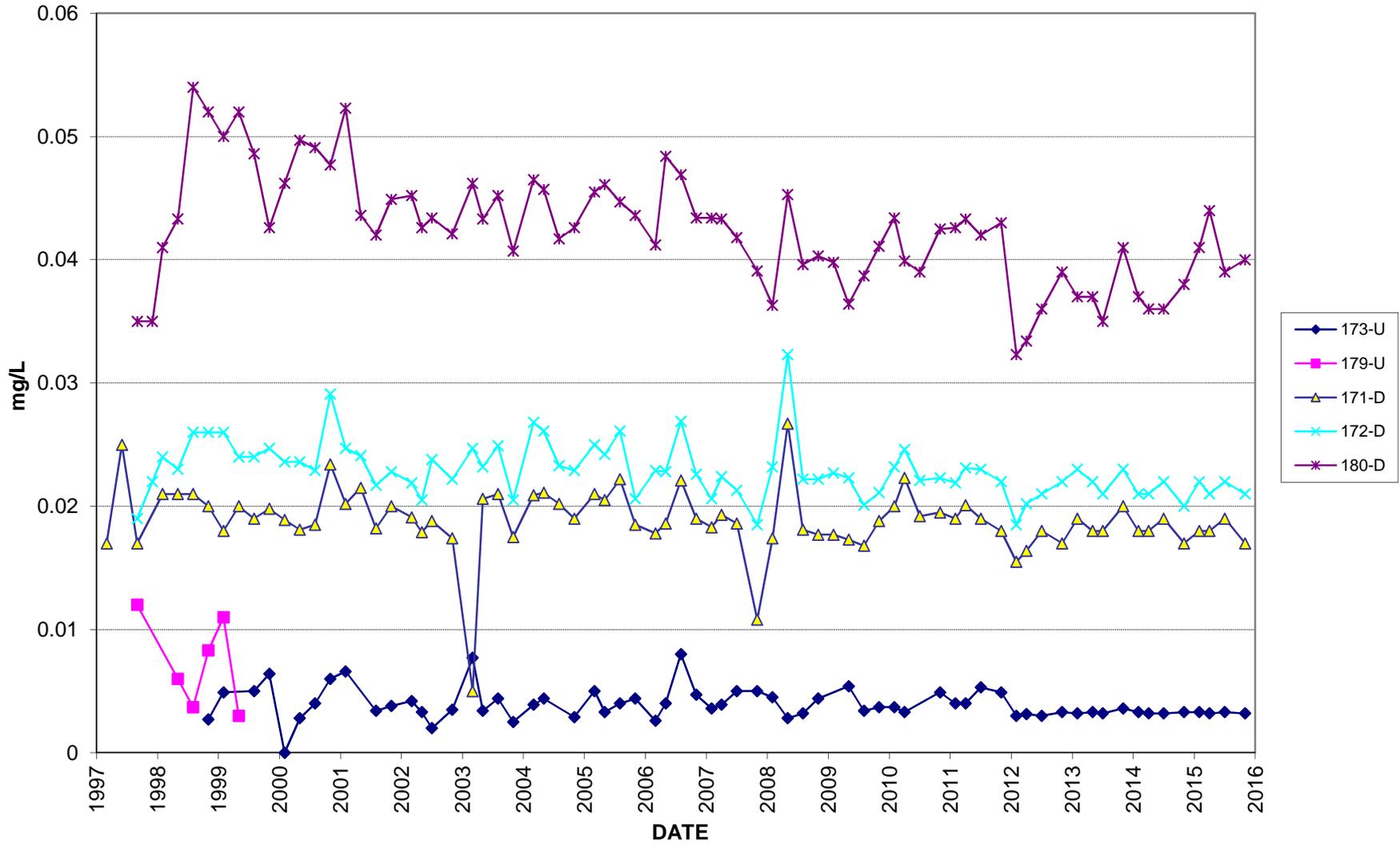
<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
Aug-08	0.0032	0.0181	0.0222	0.0396
Nov-08	0.0044	0.0177	0.0222	0.0403
Feb-09	U	0.0177	0.0227	0.0398
May-09	0.0054	0.0173	0.0223	0.0364
Aug-09	0.0034	0.0168	0.0201	0.0387
Nov-09	0.0037	0.0188	0.0211	0.0411
Feb-10	0.0037	0.02	0.0232	0.0434
Apr-10	0.0033	0.0223	0.0246	0.0399
Jul-10	U	0.0192	0.0221	0.039
Nov-10	0.0049	0.0195	0.0223	0.0425
Feb-11	0.004	0.019	0.0219	0.0426
Apr-11	0.004	0.0201	0.0231	0.0433
Jul-11	0.0053	0.019	0.023	0.042
Nov-11	0.0049	0.018	0.022	0.043
Feb-12	0.003	0.0155	0.0185	0.0323
May-12	0.00313	0.0164	0.0202	0.0334
Aug-12	0.003	0.018	0.021	0.036
Oct-12	0.0033	0.017	0.022	0.039
Feb-13	0.0032	0.019	0.023	0.037
May-13	0.0033	0.018	0.022	0.037
Jul-13	0.0032	0.018	0.021	0.035
Nov-13	0.0036	0.020	0.023	0.041
Feb-14	0.0033	0.018	0.021	0.037
Apr-14	0.0032	0.018	0.021	0.036
Jul-14	0.0032	0.019	0.022	0.036
Nov-14	0.0033	0.017	0.020	0.038
Feb-15	0.0033	0.018	0.022	0.041
May-15	0.0032	0.018	0.021	0.044
Jul-15	0.0033	0.019	0.022	0.039
Nov-15	0.0032	0.017	0.021	0.040

TEST 2
STATISTICS FOR POND 17 (WMU 14)

Arsenic				
<u>Date</u>	Upgradient Well	<u>Downgradient Wells</u>		
Test 2 Results	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
	Well 173	Well 171	Well 172	Well 180
Pre-2015 Mean	0.0039	0.0191	0.0230	0.0425
2015 Mean	0.0033	0.0180	0.0215	0.0410
1991-2015 Statistical Summary				
Mean	0.004	0.019	0.023	0.042
Median	0.004	0.019	0.023	0.043
Standard Deviation	0.001	0.002	0.002	0.005
Kurtosis	3.083	4.309	3.418	-0.076
Skewness	1.515	0.253	1.179	0.215
Minimum	0.002	0.011	0.019	0.032
Maximum	0.008	0.027	0.032	0.054
Count	59	74	74	74

U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.
All concentrations in mg/l.

Arsenic in Groundwater (WMU 14)

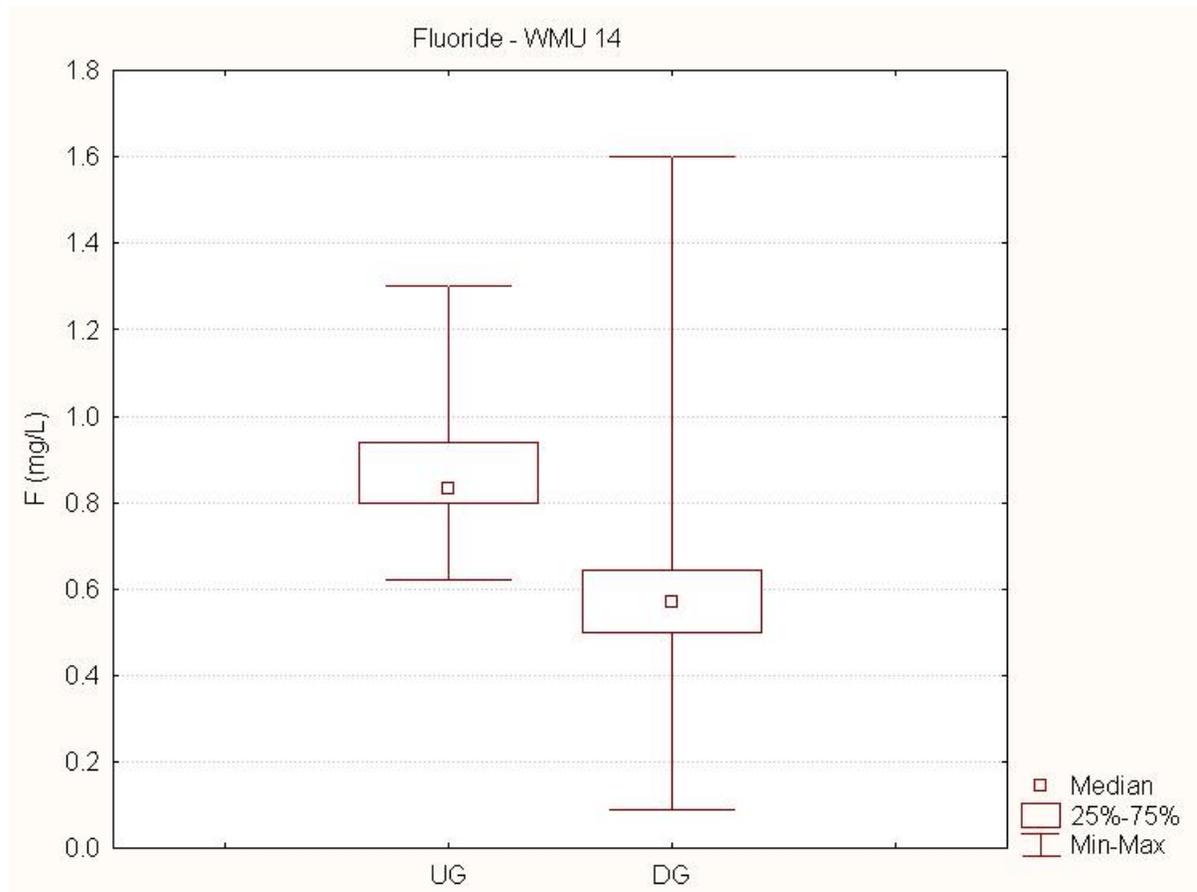


WMU 14 TEST 1 FLUORIDE

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	68	0.835	16241.0	1065.0	10.69	<0.0001
Downgradient	220	0.570	25375.0			

Summary: The median fluoride concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 17 (WMU 14)

Fluoride

<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
Mar-97	N.S.	0.66	N.S.	N.S.
Jun-97	N.S.	0.59	N.S.	N.S.
Sep-97	N.S.	0.58	0.33	0.76
Dec-97	N.S.	0.55	0.32	0.71
Feb-98	N.S.	0.61	0.37	0.68
May-98	N.S.	0.56	0.37	0.57
Aug-98	N.S.	0.59	0.39	0.37
Nov-98	0.95	0.62	0.40	0.70
Feb-99	1.04	0.63	0.40	0.43
May-99	1.03	0.61	0.40	0.47
Aug-99	0.83	0.65	0.46	0.44
Nov-99	U	U	U	U
Mar-00	0.89	0.67	0.42	0.55
May-00	0.96	0.69	0.3	0.09
Aug-00	0.85	0.71	0.5	0.58
Nov-00	0.86	0.65	0.46	0.71
Feb-01	0.76	0.61	0.38	0.53
May-01	0.8	0.76	0.38	0.48
Aug-01	0.7	0.63	0.4	0.47
Nov-01	0.75	0.6	0.42	0.51
Mar-02	0.79	0.64	0.41	0.56
May-02	0.81	0.64	0.42	0.53
Jul-02	0.8	0.66	0.48	0.51
Nov-02	1.1	0.68	0.52	0.83
Mar-03	0.83	0.62	0.45	0.67
May-03	0.83	0.63	0.42	0.55
Aug-03	0.96	0.76	0.48	0.51
Nov-03	0.81	0.67	0.5	0.56
Mar-04	0.83	0.64	0.52	0.55
May-04	0.62	0.57	0.4	0.51
Aug-04	0.86	0.55	0.44	0.49
Nov-04	0.98	0.73	0.52	0.77
Mar-05	1.1	0.77	0.58	0.64
May-05	0.88	0.62	0.52	0.58
Aug-05	0.75	0.78	0.69	0.56
Nov-05	0.77	0.67	0.5	0.94
Feb-06	1.1	0.65	0.47	0.71
May-06	0.81	0.71	0.76	0.98
Aug-06	0.69	0.62	0.49	0.54
Nov-06	0.66	0.56	0.45	0.97
Feb-07	0.7	0.5	0.4	0.5
May-07	0.81	0.6	0.6	0.6
Aug-07	0.8	0.5	0.5	0.4
Nov-07	1	0.6	0.5	0.9
Feb-08	1	0.6	0.6	0.7
May-08	1	0.8	0.5	0.6

TEST 2
STATISTICS FOR POND 17 (WMU 14)

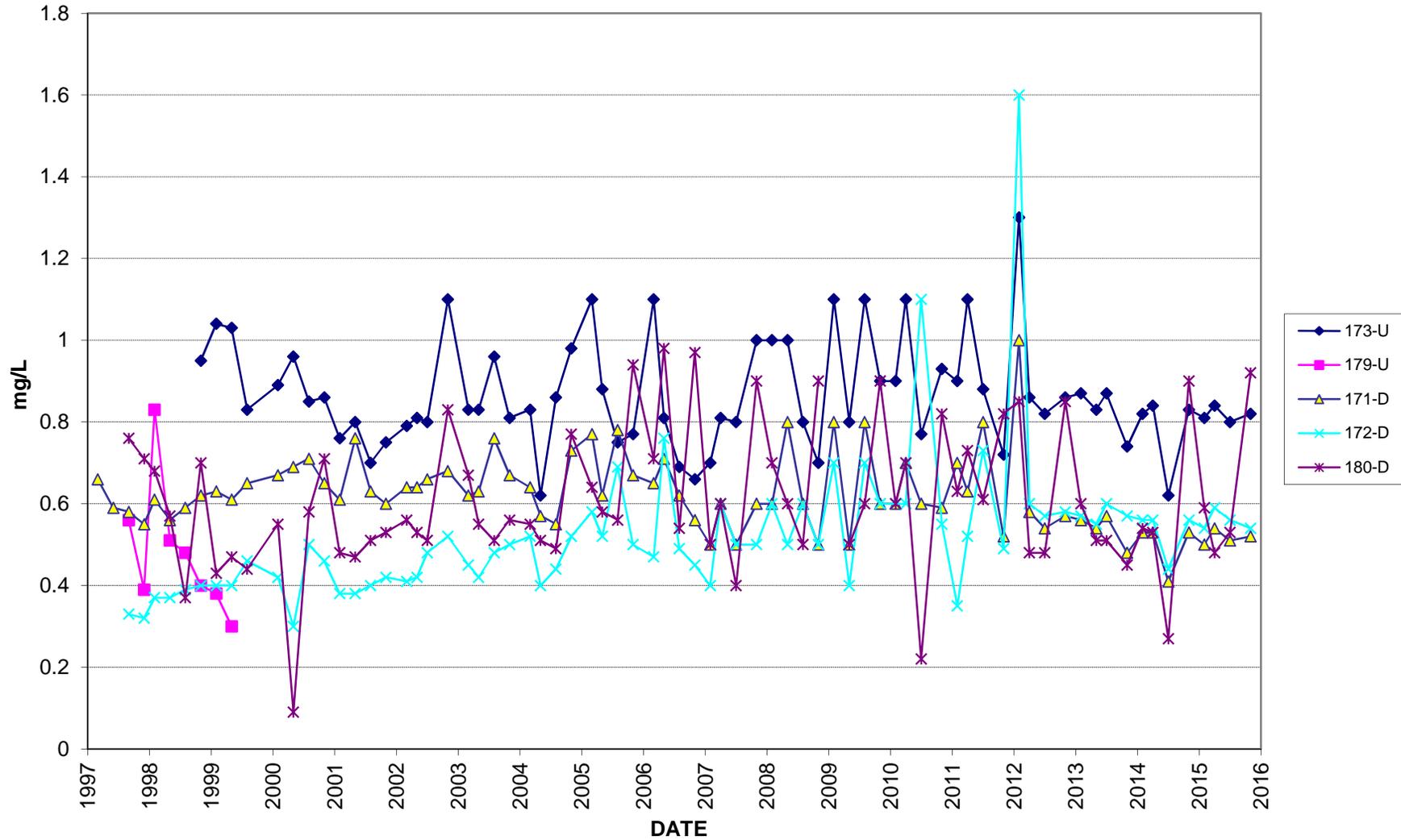
Fluoride

<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
Aug-08	0.8	0.6	0.6	0.5
Nov-08	0.7	0.5	0.5	0.9
Feb-09	1.1	0.8	0.7	U
May-09	0.8	0.5	0.4	0.5
Aug-09	1.1	0.8	0.7	0.6
Nov-09	0.9	0.6	0.6	0.9
Feb-10	0.9	0.6	0.6	0.6
Apr-10	1.1	0.7	0.6	0.7
Jul-10	0.77	0.6	1.1	0.22
Nov-10	0.93	0.59	0.55	0.82
Feb-11	0.9	0.7	0.35	0.63
Apr-11	1.1	0.63	0.52	0.73
Jul-11	0.88	0.8	0.73	0.61
Nov-11	0.72	0.52	0.49	0.82
Feb-12	1.3	1	1.6	0.85
May-12	0.86	0.58	0.6	0.48
Aug-12	0.82	0.54	0.57	0.48
Oct-12	0.86	0.57	0.58	0.85
Feb-13	0.87	0.56	0.57	0.6
May-13	0.83	0.54	0.55	0.51
Jul-13	0.87	0.57	0.6	0.51
Nov-13	0.74	0.48	0.57	0.45
Feb-14	0.82	0.53	0.56	0.54
Apr-14	0.84	0.53	0.56	0.53
Jul-14	0.62	0.41	0.44	0.27
Nov-14	0.83	0.53	0.56	0.90
Feb-15	0.81	0.50	0.54	0.59
May-15	0.84	0.54	0.59	0.48
Jul-15	0.8	0.51	0.56	0.53
Nov-15	0.82	0.52	0.54	0.92

TEST 2
STATISTICS FOR POND 17 (WMU 14)

Fluoride				
<u>Date</u>	Upgradient Well	Downgradient Wells		
Test 2 Results	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
	Well 173	Well 171	Well 172	Well 180
Pre-2015 Mean	0.8698	0.6270	0.5220	0.6060
2015 Mean	0.8175	0.5175	0.5575	0.6300
1991-2015 Statistical Summary				
Mean	0.867	0.621	0.524	0.607
Median	0.830	0.610	0.500	0.565
Standard Deviation	0.132	0.095	0.176	0.176
Kurtosis	0.817	2.383	20.122	0.434
Skewness	0.788	1.021	3.705	0.114
Minimum	0.620	0.410	0.300	0.090
Maximum	1.300	1.000	1.600	0.980
Count	68	75	73	72
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.				
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.				
All concentrations in mg/l.				

Fluoride in Groundwater (WMU 14)

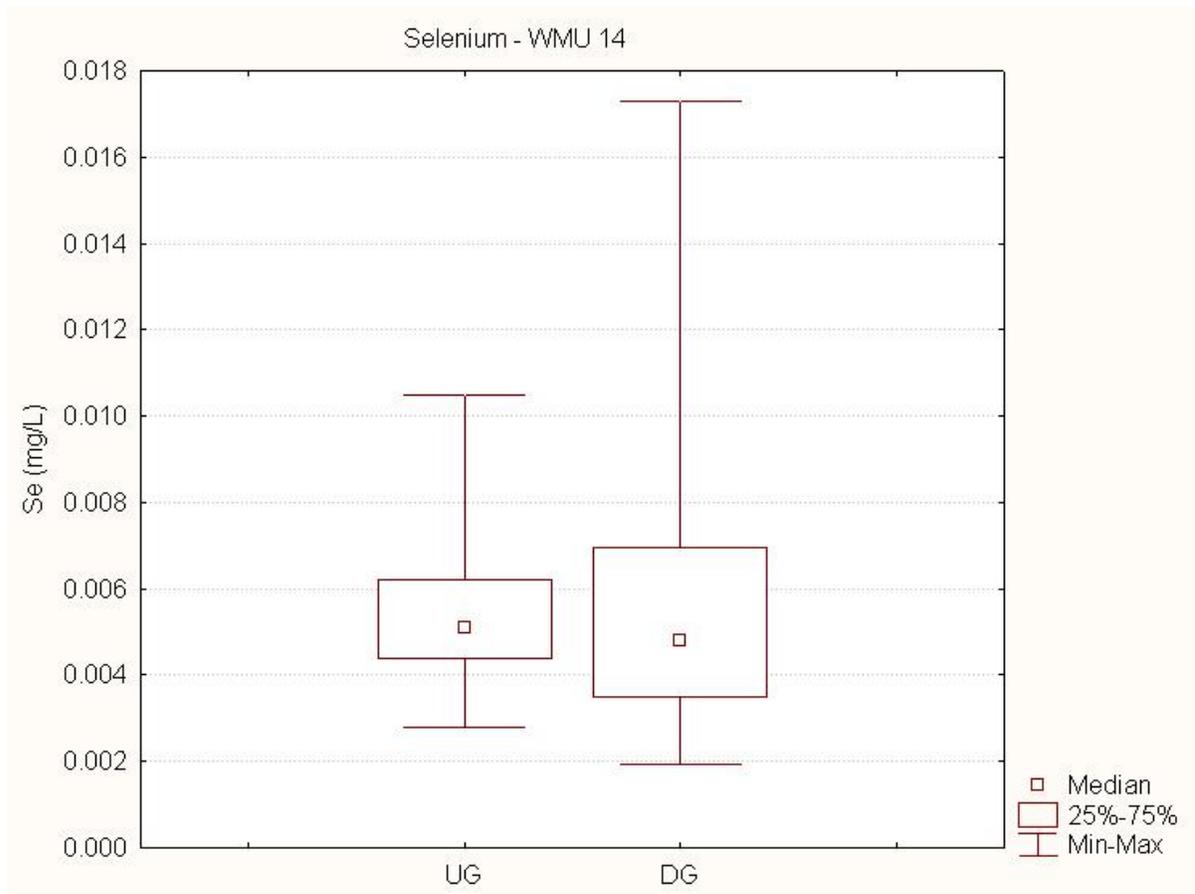


WMU 14 TEST 1 SELENIUM

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	59	0.0051	6994.5	3979.5	1.53	0.126
Downgradient	156	0.0048	16225.5			

Summary: The median selenium concentration of downgradient (DG) wells is not significantly different from the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 17 (WMU 14)

Selenium

<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
Mar-97	N.S	0.006	N.S.	N.S.
Jun-97	N.S	U	N.S.	N.S.
Sep-97	N.S	U	0.005	U
Dec-97	N.S	U	U	0.004
Feb-98	N.S	U	0.003	0.007
May-98	N.S	0.004	0.004	0.008
Aug-98	N.S	U	0.005	0.016
Nov-98	0.004	0.004	0.004	0.007
Feb-99	U	U	0.0049	0.014
May-99	0.0028	U	U	0.011
Aug-99	0.0055	0.0053	U	0.0138
Nov-99	0.0053	U	U	0.0069
Mar-00	0.0046	0.0032	U	0.0124
May-00	0.0028	U	U	0.0132
Aug-00	U	0.0027	U	0.0114
Nov-00	0.0062	0.0061	0.0064	0.0078
Feb-01	U	U	U	0.0148
May-01	0.0052	U	0.0049	0.0151
Aug-01	U	U	U	0.013
Nov-01	0.0063	0.0035	0.0053	0.015
Mar-02	0.0051	U	U	0.0116
May-02	0.0044	U	U	0.0136
Jul-02	0.0074	0.0044	U	0.0158
Nov-02	U	0.0036	U	0.0048
Mar-03	U	U	U	U
May-03	U	0.0048	0.0037	U
Aug-03	0.0046	0.0039	0.0033	0.0124
Nov-03	0.0054	0.0041	U	0.0106
Mar-04	0.006	0.0057	0.0034	0.014
May-04	0.0089	0.0037	0.0053	0.0133
Aug-04	0.0084	U	0.0026	0.0173
Nov-04	0.0049	U	U	U
Mar-05	0.0069	U	0.0037	0.0123
May-05	0.0096	0.0055	0.0061	0.014
Aug-05	0.0069	0.0026	U	0.0123
Nov-05	0.0074	0.0052	0.004	0.0058
Feb-06	0.0045	U	0.0043	0.0062
May-06	0.0091	0.0038	0.0043	0.0052
Aug-06	0.0105	0.0071	0.0079	0.015
Nov-06	0.0057	0.003	0.0058	0.0065
Feb-07	0.0047	U	U	0.0055
May-07	0.0062	0.0049	0.0038	0.0121
Aug-07	0.0054	U	0.0028	0.0096
Nov-07	0.0076	U	U	0.0055
Feb-08	0.0066	U	0.0029	0.0075
May-08	0.0052	U	U	0.0121

TEST 2
STATISTICS FOR POND 17 (WMU 14)

Selenium

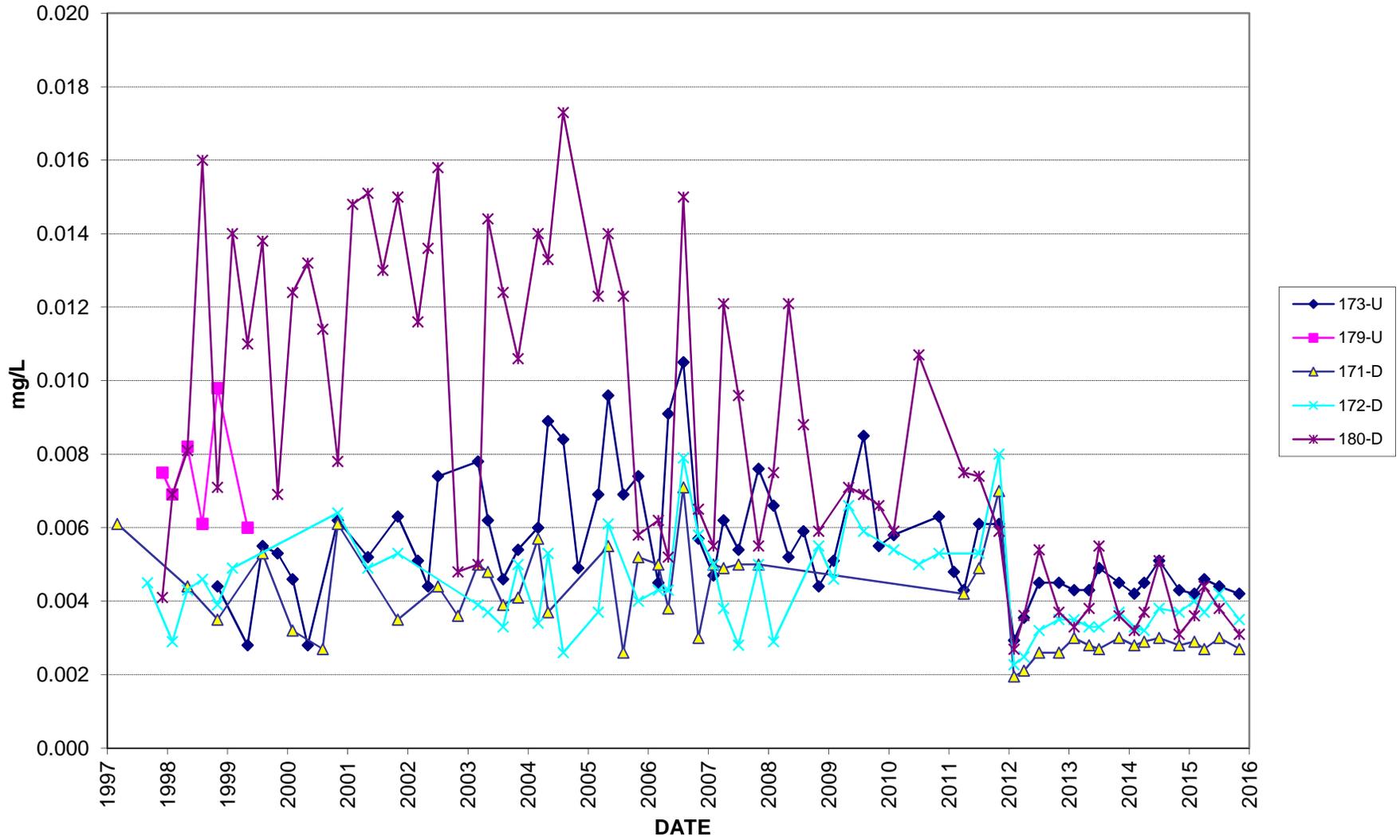
<u>Date</u>	Upgradient Well	Downgradient Wells		
	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
Aug-08	0.0059	U	U	0.0088
Nov-08	0.0044	U	0.0055	0.0059
Feb-09	0.0051	U	0.0046	U
May-09	U	U	0.0066	0.0071
Aug-09	0.0085	U	0.0059	0.0069
Nov-09	0.0055	U	U	0.0066
Feb-10	0.0058	U	0.0054	0.0059
Apr-10	U	U	U	U
Jul-10	U	U	0.005	0.0107
Nov-10	0.0063	U	0.0053	U
Feb-11	0.0048	U	U	U
Apr-11	0.0043	0.0042	U	0.0075
Jul-11	0.0061	0.0049	0.0053	0.0074
Nov-11	0.0061	0.0070	0.008	0.0059
Feb-12	0.00293	0.0020	0.00227	0.00269
May-12	0.00355	0.0021	0.00248	0.00361
Aug-12	0.0045	0.0026	0.0032	0.0054
Oct-12	0.0045	0.0026	0.0035	0.0037
Feb-13	0.0043	0.0030	0.0035	0.0033
May-13	0.0043	0.0028	0.0033	0.0038
Jul-13	0.0049	0.0027	0.0033	0.0055
Nov-13	0.0045	0.0030	0.0037	0.0036
Feb-14	0.0042	0.0028	0.0033	0.0032
Apr-14	0.0045	0.0029	0.0032	0.0037
Jul-14	0.0051	0.0030	0.0038	0.0051
Nov-14	0.0043	0.0028	0.0037	0.0031
Feb-15	<i>0.0042</i>	<i>0.0029</i>	<i>0.0040</i>	<i>0.0036</i>
May-15	<i>0.0046</i>	<i>0.0027</i>	<i>0.0037</i>	<i>0.0044</i>
Jul-15	<i>0.0044</i>	<i>0.0030</i>	<i>0.0042</i>	<i>0.0038</i>
Nov-15	<i>0.0042</i>	<i>0.0027</i>	<i>0.0035</i>	<i>0.0031</i>

TEST 2
STATISTICS FOR POND 17 (WMU 14)

Selenium				
<u>Date</u>	Upgradient Well	Downgradient Wells		
Test 2 Results	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
	Well 173	Well 171	Well 172	Well 180
Pre-2015 Mean	0.0056	0.0039	0.0044	0.0089
2015 Mean	0.0044	0.0028	0.0039	0.0037
1991-2015 Statistical Summary				
Mean	0.006	0.004	0.004	0.009
Median	0.005	0.004	0.004	0.007
Standard Deviation	0.002	0.001	0.001	0.004
Kurtosis	1.090	-0.030	0.828	-1.273
Skewness	1.058	0.909	0.953	0.342
Minimum	0.003	0.002	0.002	0.003
Maximum	0.011	0.007	0.008	0.017
Count	59	41	49	66

U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.
All concentrations in mg/l.

Selenium in Groundwater (WMU 14)



POND 18 CELL A

Waste Management Unit 15

Note:

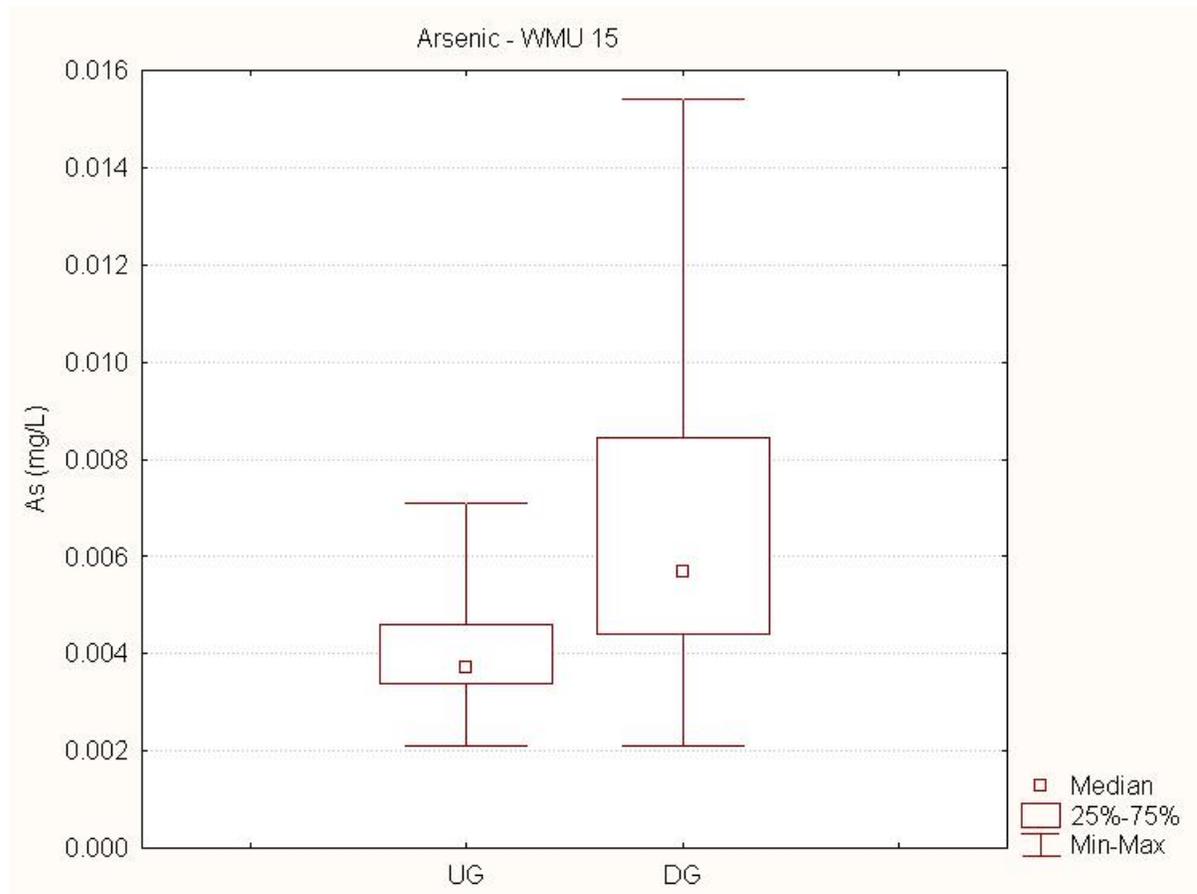
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

WMU 15 TEST 1 ARSENIC

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	60	0.0037	4056.0	2226.0	-7.39	<0.0001
Downgradient	200	0.0057	29874.0			

Summary: The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

Arsenic

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Dec-92	N.S.	U	N.S.	N.S.
Mar-93	N.S.	0.0058	N.S.	N.S.
Jun-93	N.S.	0.0081	N.S.	N.S.
Sep-93	N.S.	U	N.S.	N.S.
Dec-93	N.S.	0.0033	N.S.	N.S.
Mar-94	N.S.	0.0070	N.S.	N.S.
Jun-94	N.S.	0.0068	N.S.	N.S.
Sep-94	N.S.	0.0061	N.S.	N.S.
Dec-94	N.S.	U	N.S.	N.S.
Mar-95	N.S.	0.0031	N.S.	N.S.
Jun-95	N.S.	0.0064	N.S.	N.S.
Sep-95	N.S.	U	N.S.	N.S.
Dec-95	N.S.	0.0029	N.S.	N.S.
Mar-96	N.S.	U	N.S.	N.S.
Jun-96	N.S.	0.0088	N.S.	N.S.
Sep-96	N.S.	U	N.S.	N.S.
Dec-96	N.S.	U	N.S.	N.S.
Mar-97	N.S.	0.0050	N.S.	N.S.
Jun-97	N.S.	U	N.S.	N.S.
Sep-97	N.S.	0.0058	N.S.	N.S.
Dec-97	N.S.	U	N.S.	N.S.
Feb-98	N.S.	U	N.S.	N.S.
May-98	N.S.	0.0078	N.S.	N.S.
Aug-98	N.S.	0.0086	N.S.	N.S.
Nov-98	U	0.0065	U	0.0064
Feb-99	0.0032	0.0048	U	0.0084
May-99	0.0047	0.0068	0.0045	0.0099
Aug-99	0.0033	0.0062	0.0044	0.0066
Nov-99	0.0054	0.0068	0.0058	0.0093
Mar-00	U	U	U	U
May-00	0.0028	0.0073	0.0032	0.0080
Aug-00	U	0.0070	0.0047	0.0091
Nov-00	0.0054	0.0087	0.0069	0.0125
Feb-01	0.0034	0.0064	0.0047	0.0069
May-01	0.0041	0.0045	0.0037	0.0087
Aug-01	0.0042	0.0055	0.0036	0.0072
Nov-01	0.0031	0.0062	N.S.	0.0079
Mar-02	0.0042	0.0052	0.0039	0.0082
May-02	0.0035	0.0049	0.0036	0.0078
Jul-02	0.0049	0.0051	0.0047	0.0079
Nov-02	0.0036	0.0045	0.0046	0.0064
Mar-03	U	U	U	U
May-03	0.0043	0.0045	0.0048	0.0090
Aug-03	0.0040	0.0064	0.0057	0.0102
Nov-03	0.0045	0.0030	0.0030	0.0076
Mar-04	0.0059	0.0063	0.0047	0.0110

TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

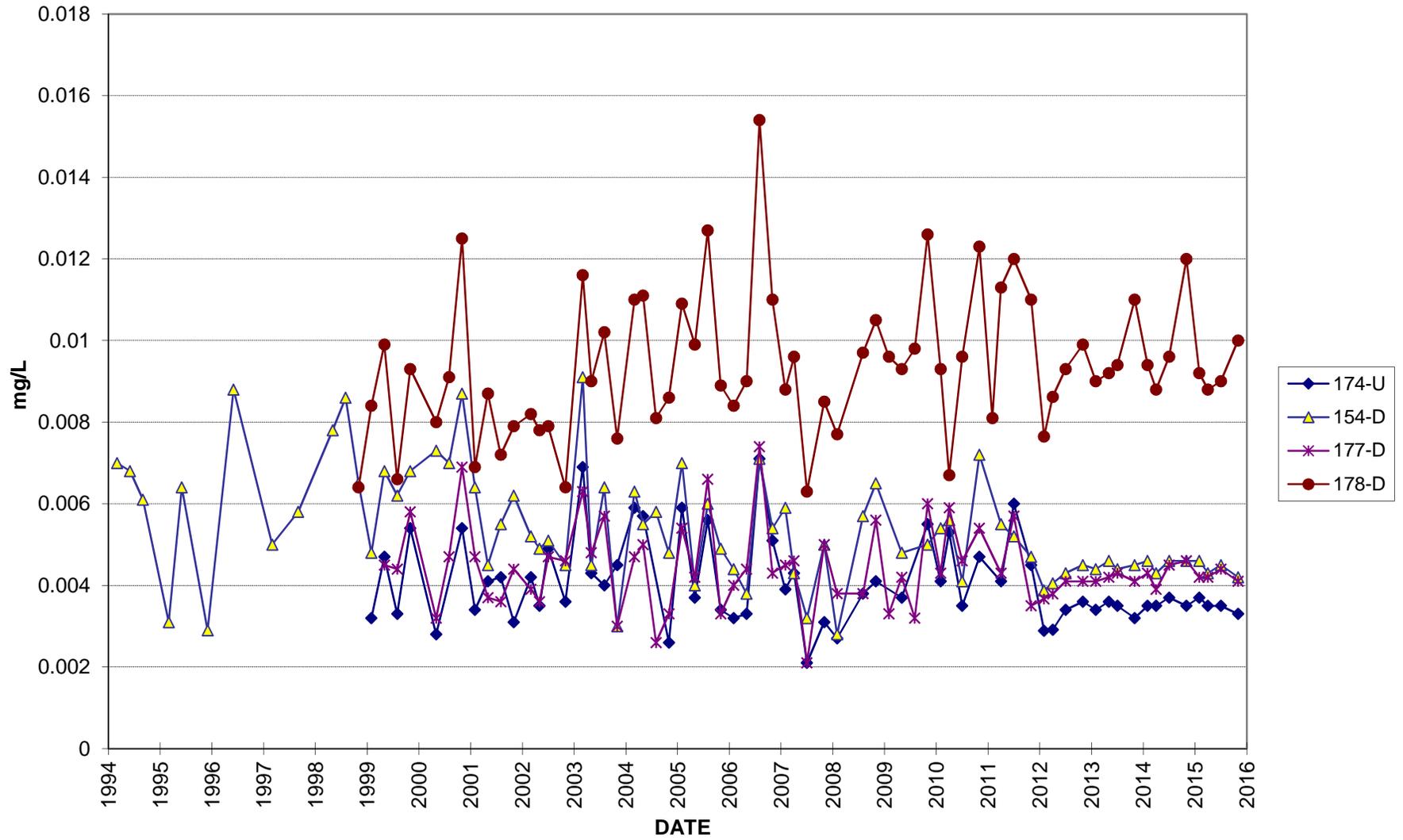
Arsenic

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
May-04	0.0057	0.0055	0.0050	0.0111
Aug-04	U	0.0058	0.0026	0.0081
Nov-04	0.0026	0.0048	0.0033	0.0086
Feb-05	0.0059	0.0070	0.0054	0.0109
May-05	0.0037	0.0040	0.0042	0.0099
Aug-05	0.0056	0.0060	0.0066	0.0127
Nov-05	0.0034	0.0049	0.0033	0.0089
Feb-06	0.0032	0.0044	0.0040	0.0084
May-06	0.0033	0.0038	0.0044	0.0090
Aug-06	0.0071	0.0071	0.0074	0.0154
Nov-06	0.0051	0.0054	0.0043	0.0110
Feb-07	0.0039	0.0059	0.0045	0.0088
May-07	0.0043	0.0043	0.0046	0.0096
Aug-07	0.0021	0.0032	0.0021	0.0063
Nov-07	0.0031	U	U	0.0085
Feb-08	U	U	U	U
May-08	U	U	U	U
Aug-08	0.0038	0.0057	0.0038	0.0097
Nov-08	0.0041	0.0065	0.0056	0.0105
Feb-09	U	U	0.0033	0.0096
May-09	0.0037	0.0048	0.0042	0.0093
Aug-09	U	U	0.0032	0.0098
Nov-09	0.0055	0.0050	0.0060	0.0126
Feb-10	0.0041	0.0054	0.0043	0.0093
Apr-10	0.0053	0.0056	0.0059	0.0067
Jul-10	0.0035	0.0041	0.0046	0.0096
Nov-10	0.0047	0.0072	0.0054	0.0123
Feb-11	0.0050	U	U	0.0081
Apr-11	0.0041	0.0055	0.0043	0.0113
Jul-11	0.0060	0.0052	0.0057	0.0120
Nov-11	0.0045	0.0047	0.0035	0.0110
Feb-12	0.0029	0.0039	0.0037	0.0077
May-12	0.0029	0.0041	0.0038	0.0086
Aug-12	0.0034	0.0043	0.0041	0.0093
Oct-12	0.0036	0.0045	0.0041	0.0099
Feb-13	0.0034	0.0044	0.0041	0.0090
May-13	0.0036	0.0046	0.0042	0.0092
Jul-13	0.0035	0.0044	0.0043	0.0094
Nov-13	0.0032	0.0045	0.0041	0.0110
Feb-14	0.0035	0.0046	0.0043	0.0094
Apr-14	0.0035	0.0043	0.0039	0.0088
Jul-14	0.0037	0.0046	0.0045	0.0096
Nov-14	0.0035	0.0046	0.0046	0.0120
Feb-15	0.0037	<i>0.0046</i>	<i>0.0042</i>	<i>0.0092</i>
May-15	0.0035	<i>0.0043</i>	<i>0.0042</i>	<i>0.0088</i>

TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

Arsenic				
<u>Date</u>	Upgradient Wells		Downgradient Wells	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Jul-15	<i>0.0035</i>	<i>0.0045</i>	<i>0.0044</i>	<i>0.0090</i>
Nov-15	<i>0.0033</i>	<i>0.0042</i>	<i>0.0041</i>	<i>0.0100</i>
Test 2 Results				
	Well 174	Well 154	Well 177	Well 178
Pre-2015 Mean	0.0061	0.0051	0.0070	0.0094
2015 Mean	0.0035	0.0044	0.0042	0.0093
1991-2015 Statistical Summary				
Mean	0.006	0.005	0.007	0.009
Median	0.004	0.005	0.004	0.009
Standard Deviation	0.008	0.001	0.003	0.002
Kurtosis	0.508	-0.042	1.288	1.337
Skewness	0.877	0.547	0.718	0.744
Minimum	0.002	0.003	0.002	0.006
Maximum	0.078	0.009	0.015	0.015
Count	60	75	60	65
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics. All concentrations in mg/l.</p>				

Arsenic in Groundwater (WMU 15)

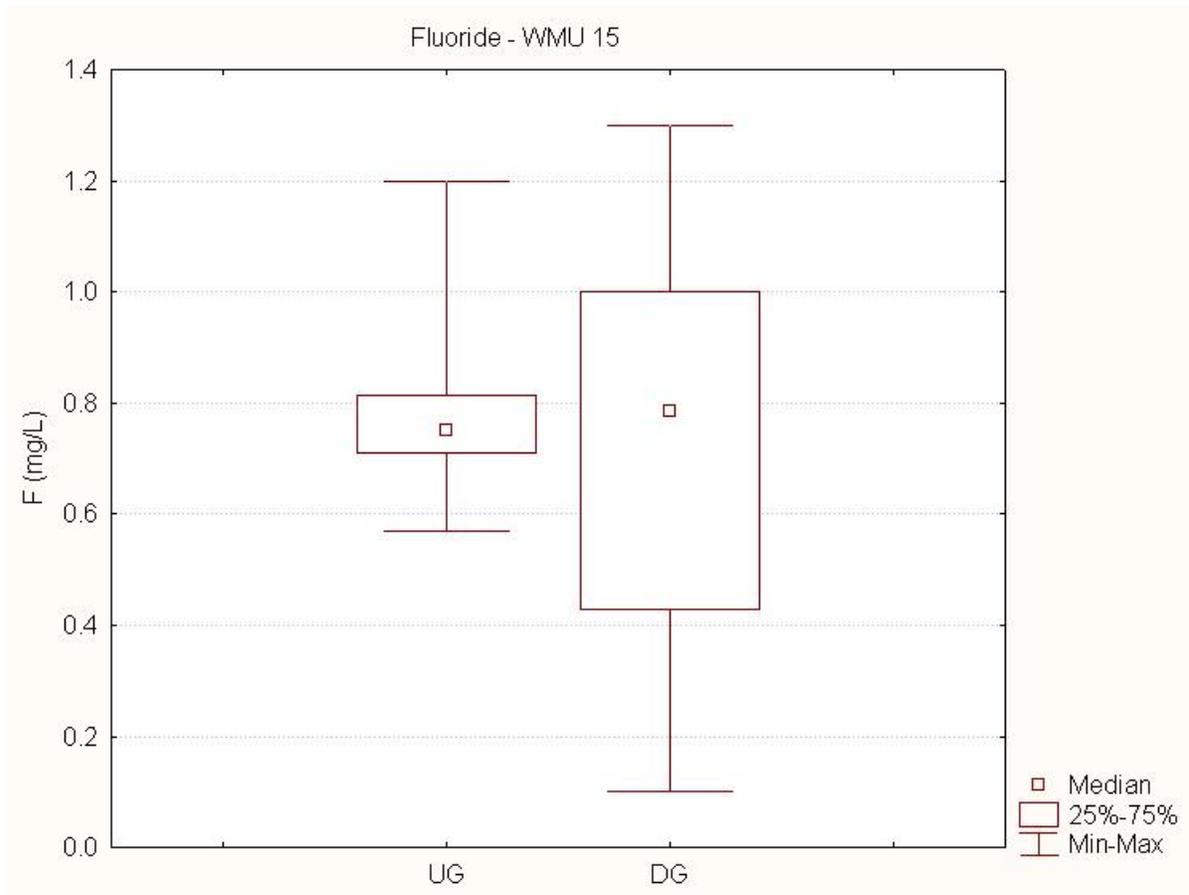


WMU 15 TEST 1 FLUORIDE

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	68	0.75	9550.5	7204.5	-0.68	0.50
Downgradient	224	0.79	33227.5			

Summary: The median fluoride concentration of downgradient (DG) wells is not significantly different from the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

Fluoride

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Dec-92	N.S.	1.200	N.S.	N.S.
Mar-93	N.S.	1.200	N.S.	N.S.
Jun-93	N.S.	1.100	N.S.	N.S.
Sep-93	N.S.	0.900	N.S.	N.S.
Dec-93	N.S.	1.200	N.S.	N.S.
Mar-94	N.S.	1.300	N.S.	N.S.
Jun-94	N.S.	1.100	N.S.	N.S.
Sep-94	N.S.	1.100	N.S.	N.S.
Dec-94	N.S.	1.080	N.S.	N.S.
Mar-95	N.S.	1.150	N.S.	N.S.
Jun-95	N.S.	1.190	N.S.	N.S.
Sep-95	N.S.	1.190	N.S.	N.S.
Dec-95	N.S.	0.910	N.S.	N.S.
Mar-96	N.S.	0.936	N.S.	N.S.
Jun-96	N.S.	1.110	N.S.	N.S.
Sep-96	N.S.	1.200	N.S.	N.S.
Dec-96	N.S.	1.060	N.S.	N.S.
Mar-97	N.S.	1.040	N.S.	N.S.
Jun-97	N.S.	1.030	N.S.	N.S.
Sep-97	N.S.	0.970	N.S.	N.S.
Dec-97	N.S.	1.010	N.S.	N.S.
Feb-98	N.S.	1.080	N.S.	N.S.
May-98	N.S.	1.080	N.S.	N.S.
Aug-98	N.S.	1.050	N.S.	N.S.
Nov-98	0.760	1.210	0.830	1.060
Feb-99	0.670	1.040	0.650	0.300
May-99	0.710	1.140	0.820	0.360
Aug-99	0.720	1.100	0.770	0.220
Nov-99	U	U	U	U
Mar-00	0.77	1.10	0.8	0.36
May-00	0.64	1.10	0.83	U
Aug-00	0.88	1.10	U	0.29
Nov-00	0.75	1.10	0.78	0.46
Feb-01	0.67	0.99	0.72	0.21
May-01	0.85	1.00	0.83	0.27
Aug-01	0.57	1.00	0.77	0.28
Nov-01	0.68	1.10	N.S.	0.21
Mar-02	0.73	1.10	0.76	0.29
May-02	0.75	1.10	0.76	0.33
Jul-02	0.75	1.10	0.77	0.33
Nov-02	0.92	1.10	0.76	0.31
Mar-03	0.72	1.00	0.73	0.3
May-03	0.73	1.00	0.76	0.24
Aug-03	0.81	1.00	0.78	0.26
Nov-03	0.74	1.00	0.74	0.25
Mar-04	0.78	1.00	0.75	0.2

TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

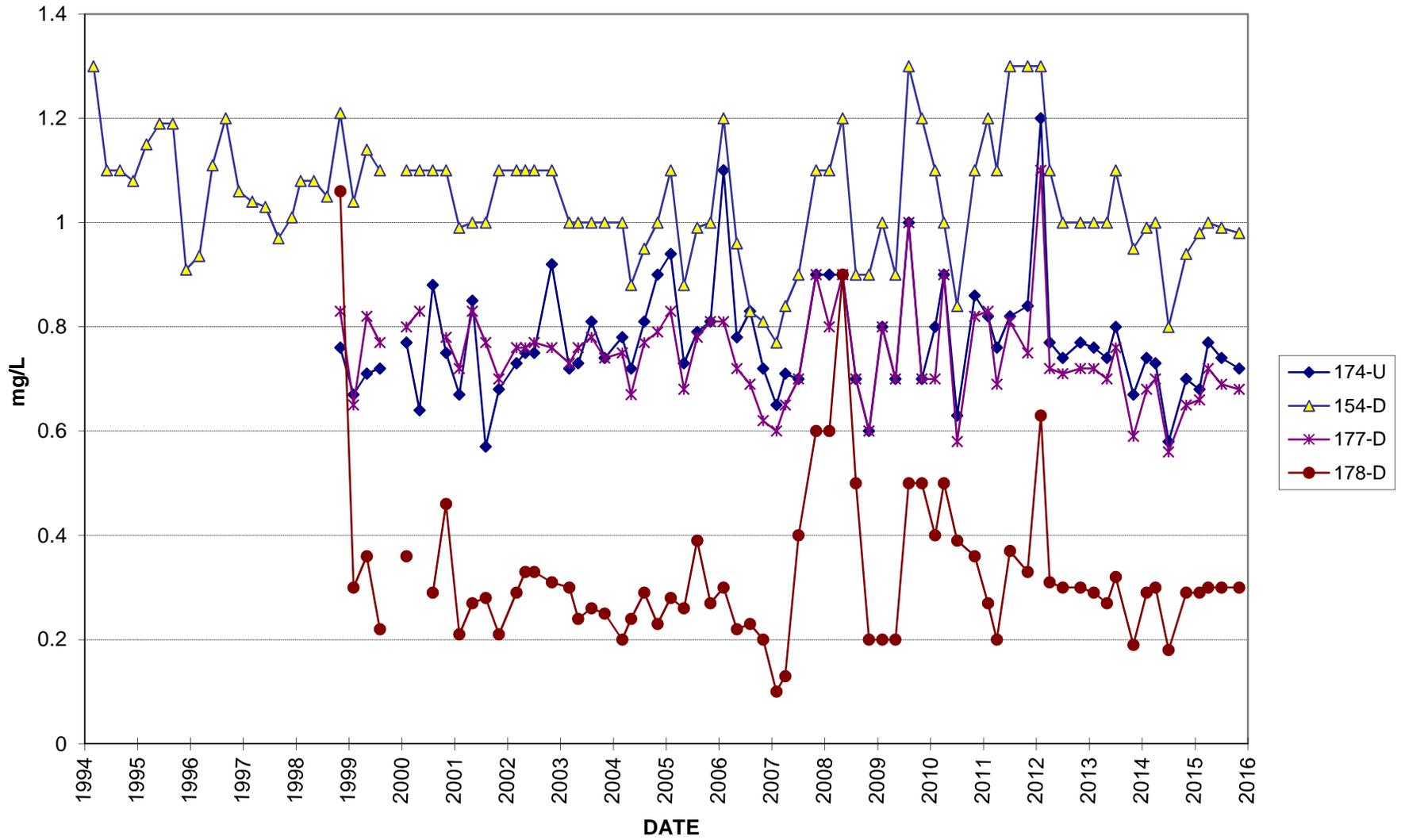
Fluoride

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
May-04	0.72	0.88	0.67	0.24
Aug-04	0.81	0.95	0.77	0.29
Nov-04	0.90	1.00	0.79	0.23
Feb-05	0.94	1.1	0.83	0.28
May-05	0.73	0.88	0.68	0.26
Aug-05	0.79	0.99	0.78	0.39
Nov-05	0.81	1	0.81	0.27
Feb-06	1.1	1.2	0.81	0.3
May-06	0.78	0.96	0.72	0.22
Aug-06	0.83	0.83	0.69	0.23
Nov-06	0.72	0.81	0.62	0.2
Feb-07	0.65	0.77	0.6	0.1
May-07	0.71	0.84	0.65	0.13
Aug-07	0.7	0.9	0.7	0.4
Nov-07	0.9	1.1	0.9	0.6
Feb-08	0.9	1.1	0.8	0.6
May-08	0.9	1.2	0.9	0.9
Aug-08	0.7	0.9	0.7	0.5
Nov-08	0.6	0.9	0.6	0.2
Feb-09	0.8	1	0.8	0.2
May-09	0.7	0.9	0.7	0.2
Aug-09	1	1.3	1	0.5
Nov-09	0.7	1.2	0.7	0.5
Feb-10	0.8	1.1	0.7	0.4
Apr-10	0.9	1	0.9	0.5
Jul-10	0.63	0.84	0.58	0.39
Nov-10	0.86	1.1	0.82	0.36
Feb-11	0.82	1.2	0.83	0.27
Apr-11	0.76	1.1	0.69	0.2
Jul-11	0.82	1.3	0.81	0.37
Nov-11	0.84	1.3	0.75	0.33
Feb-12	1.2	1.3	1.1	0.63
May-12	0.77	1.1	0.72	0.31
Aug-12	0.74	1	0.71	0.3
Oct-12	0.77	1	0.72	0.3
Feb-13	0.76	1	0.72	0.29
May-13	0.74	1	0.7	0.27
Jul-13	0.8	1.1	0.76	U
Nov-13	0.67	0.95	0.59	0.3
Feb-14	0.74	0.99	0.68	0.29
Apr-14	0.73	1.00	0.70	0.30
Jul-14	0.58	0.80	0.56	0.18
Nov-14	0.70	0.94	0.65	0.29
Feb-15	0.68	0.98	0.66	0.29
May-15	0.77	1.00	0.72	0.30
Jul-15	0.74	0.99	0.69	0.30

TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

Fluoride				
	Upgradient Wells	Downgradient Wells		
<u>Date</u>	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Nov-15	<i>0.72</i>	0.98	0.68	0.30
Test 2 Results				
	Well 174	Well 154	Well 177	Well 178
Pre-2015 Mean	0.6989	0.9196	0.5409	0.3315
2015 Mean	0.7275	0.9875	0.6875	0.2975
1991-2015 Statistical Summary				
Mean	0.700	0.922	0.538	0.329
Median	0.750	1.040	0.745	0.295
Standard Deviation	0.133	0.220	0.246	0.157
Kurtosis	3.455	-0.145	2.654	8.443
Skewness	1.330	0.068	0.921	2.512
Minimum	0.570	0.770	0.560	0.100
Maximum	1.200	1.300	1.100	1.060
Count	68	92	66	66
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.				
N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics.				
All concentrations in mg/l.				

Fluoride in Groundwater (WMU 15)

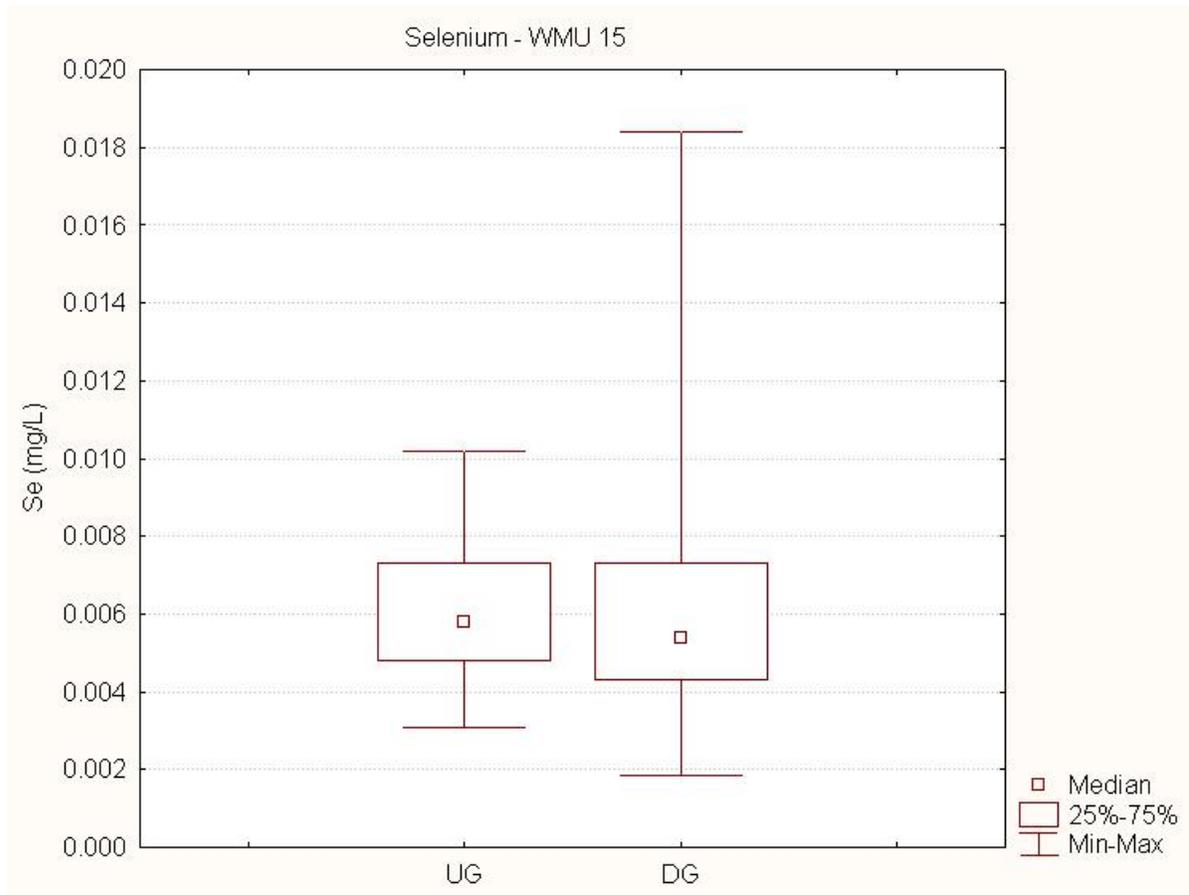


WMU 15 TEST 1 SELENIUM

Mann-Whitney U Test Results

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	63	0.0058	7624.5	4534.5	1.23	0.22
Downgradient	161	0.0054	17575.5			

Summary: The median selenium concentration of downgradient (DG) wells is not significantly different from the median concentration of upgradient (UG) wells.



TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

Selenium

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Dec-92	N.S.	U	N.S.	N.S.
Mar-93	N.S.	0.0023	N.S.	N.S.
Jun-93	N.S.	U	N.S.	N.S.
Sep-93	N.S.	U	N.S.	N.S.
Dec-93	N.S.	U	N.S.	N.S.
Mar-94	N.S.	U	N.S.	N.S.
Jun-94	N.S.	U	N.S.	N.S.
Sep-94	N.S.	U	N.S.	N.S.
Dec-94	N.S.	U	N.S.	N.S.
Mar-95	N.S.	U	N.S.	N.S.
Jun-95	N.S.	U	N.S.	N.S.
Sep-95	N.S.	0.0184	N.S.	N.S.
Dec-95	N.S.	U	N.S.	N.S.
Mar-96	N.S.	U	N.S.	N.S.
Jun-96	N.S.	U	N.S.	N.S.
Sep-96	N.S.	U	N.S.	N.S.
Dec-96	N.S.	U	N.S.	N.S.
Mar-97	N.S.	0.0042	N.S.	N.S.
Jun-97	N.S.	0.0046	N.S.	N.S.
Sep-97	N.S.	U	N.S.	N.S.
Dec-97	N.S.	0.0047	N.S.	N.S.
Feb-98	N.S.	0.0032	N.S.	N.S.
May-98	N.S.	U	N.S.	N.S.
Aug-98	N.S.	0.0067	N.S.	N.S.
Nov-98	U	U	U	U
Feb-99	0.0074	U	U	0.0051
May-99	U	U	U	U
Aug-99	0.0075	U	0.0051	0.0070
Nov-99	0.0064	U	U	0.0083
Mar-00	0.0067	U	0.0039	0.0099
May-00	0.0031	U	0.0041	0.0109
Aug-00	U	U	0.0058	0.0050
Nov-00	0.0061	U	0.0065	0.0086
Feb-01	0.0045	U	U	0.0091
May-01	0.0057	U	U	0.0075
Aug-01	0.0040	U	U	0.0064
Nov-01	0.0037	U	N.S.	0.0129
Mar-02	0.0043	U	U	0.0061
May-02	0.0056	U	0.0046	0.0084
Jul-02	0.0071	U	0.0056	0.0097
Nov-02	0.0033	U	0.0043	0.0041
Mar-03	U	U	U	U
May-03	0.0096	0.0036	U	U
Aug-03	0.0073	U	0.0077	0.0056
Nov-03	0.0081	U	0.0047	0.0058
Mar-04	0.0091	0.0034	0.0056	0.0099

TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

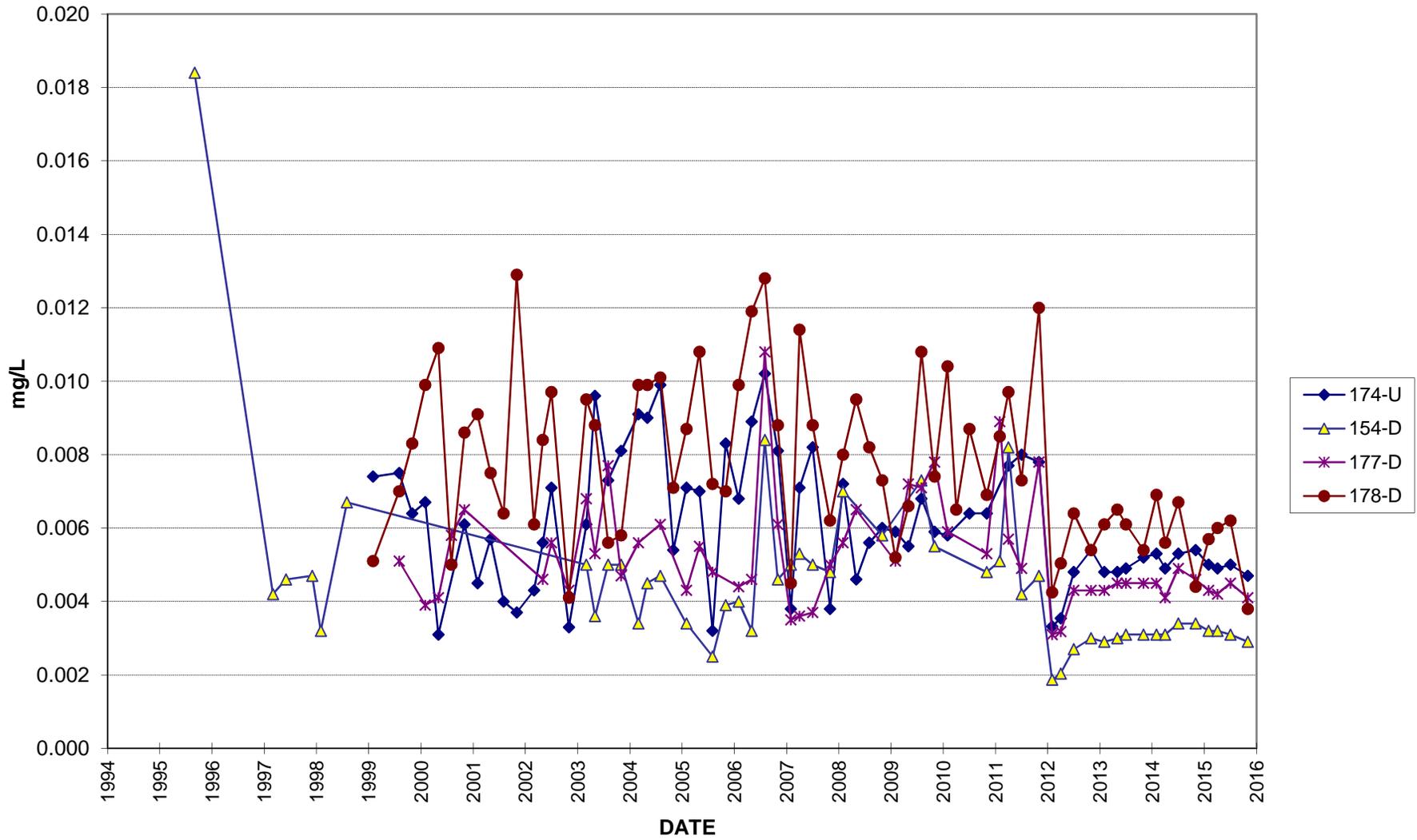
Selenium

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
May-04	0.0090	0.0045	U	0.0099
Aug-04	0.0099	0.0047	0.0061	0.0101
Nov-04	0.0054	U	U	0.0071
Feb-05	0.0071	0.0034	0.0043	0.0087
May-05	0.0070	U	0.0055	0.0108
Aug-05	0.0032	0.0025	0.0048	0.0072
Nov-05	0.0083	0.0039	0.0050	0.0070
Feb-06	0.0068	0.0040	0.0044	0.0099
May-06	0.0089	0.0032	0.0046	0.0119
Aug-06	0.0102	0.0084	0.0108	0.0128
Nov-06	0.0081	0.0046	0.0061	0.0088
Feb-07	0.0038	U	0.0035	0.0045
May-07	0.0071	0.0053	0.0036	0.0114
Aug-07	0.0082	U	0.0037	0.0088
Nov-07	0.0038	0.0048	U	0.0062
Feb-08	0.0072	0.0070	0.0056	0.0080
May-08	0.0046	U	0.0065	0.0095
Aug-08	0.0056	U	U	0.0082
Nov-08	0.0060	0.0058	U	0.0073
Feb-09	0.0059	U	0.0051	0.0052
May-09	0.0055	U	0.0072	0.0066
Aug-09	0.0068	0.0073	0.0071	0.0108
Nov-09	0.0059	0.0055	0.0078	0.0074
Feb-10	0.0058	U	0.0059	0.0104
Apr-10	U	U	U	0.0065
Jul-10	0.0064	U	U	0.0087
Nov-10	0.0064	0.0048	0.0053	0.0069
Feb-11	U	0.0051	0.0089	0.0085
Apr-11	0.0077	0.0082	0.0057	0.0097
Jul-11	0.0080	0.0042	0.0049	0.0073
Nov-11	0.0078	0.0047	0.0078	0.0120
Feb-12	0.0033	0.0019	0.0031	0.0043
May-12	0.0035	0.0020	0.0032	0.0050
Aug-12	0.0048	0.0027	0.0043	0.0064
Oct-12	0.0054	0.0030	0.0043	0.0054
Feb-13	0.0048	0.0029	0.0043	0.0061
May-13	0.0048	0.0030	0.0045	0.0065
Jul-13	0.0049	0.0031	0.0045	0.0061
Nov-13	0.0052	0.0031	0.0045	0.0054
Feb-14	0.0053	0.0031	0.0045	0.0069
Apr-14	0.0049	0.0031	0.0041	0.0056
Jul-14	0.0053	0.0034	0.0049	0.0067
Nov-14	0.0054	0.0034	0.0046	0.0044
Feb-15	<i>0.0050</i>	<i>0.0032</i>	<i>0.0043</i>	<i>0.0057</i>
May-15	<i>0.0049</i>	<i>0.0032</i>	<i>0.0042</i>	<i>0.0060</i>
Jul-15	<i>0.0050</i>	<i>0.0031</i>	<i>0.0045</i>	<i>0.0062</i>

TEST 2
STATISTICS FOR POND 18 CELL A (WMU 15)

Selenium				
	Upgradient Wells	Downgradient Wells		
<u>Date</u>	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Nov-15	<i>0.0047</i>	<i>0.0029</i>	<i>0.0041</i>	<i>0.0038</i>
Test 2 Results				
	Well 174	Well 154	Well 177	Well 178
Pre-2015 Mean	0.0059	0.0048	0.0067	0.0078
2015 Mean	0.0049	0.0031	0.0043	0.0054
1991-2015 Statistical Summary				
Mean	0.006	0.005	0.007	0.008
Median	0.006	0.004	0.005	0.007
Standard Deviation	0.002	0.002	0.002	0.002
Kurtosis	-0.508	18.078	3.152	-0.569
Skewness	0.369	3.686	1.561	0.446
Minimum	0.003	0.002	0.003	0.004
Maximum	0.013	0.018	0.013	0.013
Count	63	45	51	65
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2015 data in italics. All concentrations in mg/l.				

Selenium in Groundwater (WMU 15)



APPENDIX B

2015 GROUNDWATER QUALITY TABLES

2015 Groundwater Quality

STATION ID: 104				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	90.44	91.52	91.57	90.38
OXIDATION REDUCTION POTENTIAL	183	157.4	17	149.1
EH (MILLIVOLTS)	393.32	367.61	227.44	360.02
OXYGEN (O) (FLD) DIS	0.21	0.09	0.22	0.25
PH (FLD)	7.5	7.45	7.4	7.47
SC (UMHOS/CM AT 25C) (FLD)	1797	1756	1798	1687
TURBIDITY (NTU) (FLD)	0.3	0.2	0.3	0.3
WATER TEMPERATURE (C) (FLD)	15.2	15.3	15.1	14.7
POTASSIUM (K) TOT	244	313	209	193 J
SULFATE (SO4)	136	126	138	125 J
CHLORIDE (CL)	121	109 J	115	107 J
FLUORIDE (F)	3.1 J	2.9 J	3.1	2.7 J
TOTAL AMMONIA (NH3+NH4 AS N)	3.2	3.2	3.3 J	3.1
NITRATE (NO3-N)	20.1	19 J	21.5	18.2 J
ORTHOPHOSPHATE (PO4-P)	1.1	1.1	1.1	
ORTHOPHOSPHATE (PO4-P) DIS				1.1 J
ARSENIC (AS) TOT	0.04	0.036	0.036	0.038
CADMIUM (CD) TOT	0.00036 U	0.0017 J U	<0.003 J	<0.003
SELENIUM (SE) TOT	0.0035 J	0.0031	0.0035	0.0032

STATION ID: 108 (Qtr-1); 108A (Qtr-2,3,4)				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	-51.1	33.1	135.5	134.5
EH (MILLIVOLTS)	157.32	240.57	343.69	343.16
OXYGEN (O) (FLD) DIS	0.32	0.6	0.45	0.71
PH (FLD)	6.96	6.91	6.9	7.02
SC (UMHOS/CM AT 25 C) (FLD)	2477	2668	2699	2646
TURBIDITY (NTU) (FLD)	0.3	0.9	0.2	0.3
WATER TEMPERATURE (C) (FLD)	16.8	17.6	17	16.6
POTASSIUM (K) TOT	118	123	133	124 J
SULFATE (SO4)	331	350	355	357 J
CHLORIDE (CL)	411	424	420 J	425 J
FLUORIDE (F)	0.35 J	0.52	0.47 J	0.42 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	0.02 J	<0.04	<0.04
NITRATE (NO3-N)	15.1	17.8	18.6 J	18.4 J
ELEMENTAL PHOSPHORUS (P4)		0.000021 J		0.00035 J
ORTHOPHOSPHATE (PO4-P)	1.5	0.44	0.63	
ORTHOPHOSPHATE (PO4-P) DIS				0.64 J
PHOSPHORUS (P) TOT	1.61	0.5	0.669	0.673
ARSENIC (AS) TOT	0.022	0.018	0.021	0.023
CADMIUM (CD) TOT	<0.003	<0.003 J	<0.003	<0.003
SELENIUM (SE) TOT	0.012 J	0.015	0.014	0.015

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 113				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	71.75	73.35	72.74	71.53
OXIDATION REDUCTION POTENTIAL	147.1	43	85.9	93.2
EH (MILLIVOLTS)	360.75	256.65	299.55	307.33
OXYGEN (O) (FLD) DIS	1.39	1.45	1.36	1.66
PH (FLD)	7.29	7.21	7.26	7.22
SC (UMHOS/CM AT 25C) (FLD)	1152	1151	1169	1158
TURBIDITY (NTU) (FLD)	0.4	0.3	0.2	0.5
WATER TEMPERATURE (C) (FLD)	12.4	12.4	12.4	12
POTASSIUM (K) TOT	17.4	17.1	21.1	16.6 J
SULFATE (SO4)	87.7	87	86.6	86.7 J
CHLORIDE (CL)	128	117	125 J	121 J
FLUORIDE (F)	0.43 J	0.43	0.45 J	0.42 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.4	<0.04
NITRATE (NO3-N)	8.4	8.2	9.2 J	9 J
ORTHOPHOSPHATE (PO4-P)	0.2	0.22	0.24	
ORTHOPHOSPHATE (PO4-P) DIS				0.21 J
ARSENIC (AS) TOT	0.028	0.027	0.026	0.028
CADMIUM (CD) TOT	<0.003	<0.003 J	0.0017 J U	<0.003
SELENIUM (SE) TOT	0.0035 J	0.0037	0.0034	0.0034

STATION ID: 114				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	73.3	17.8	-25.3	56
EH (MILLIVOLTS)	288.02	232.28	189.18	270.96
OXYGEN (O) (FLD) DIS	0.24	0.21	0.07	0.28
PH (FLD)	7.27	7.14	7.26	7.15
SC (UMHOS/CM AT 25 C) (FLD)	1590	1582	1629	1609
TURBIDITY (NTU) (FLD)	0.6	0.2	0.6	0.3
WATER TEMPERATURE (C) (FLD)	11.5	11.7	11.7	11.3
POTASSIUM (K) TOT	31.3	26.6	37.4 J	25.9
SULFATE (SO4)	102	99.5	100	99.5 J
CHLORIDE (CL)	140	132 J	135	135 J
FLUORIDE (F)	1.2 J	1.5	3.3 J	3.1 J
FLUORIDE (F) SM4500	0.89	1	0.95 J	0.92
TOTAL AMMONIA (NH3+NH4 AS N)	2	1.9	1.9	2.1
NITRATE (NO3-N)	0.05 J	<0.1	<0.1	<0.1 J
ORTHOPHOSPHATE (PO4-P)	1.6	1.5	1.6	
ORTHOPHOSPHATE (PO4-P) DIS				2
ARSENIC (AS) TOT	0.13 J	0.12	0.12	0.11
CADMIUM (CD) TOT	0.00028 U	<0.003	0.0048 J	0.0034
SELENIUM (SE) TOT	0.0024 J	0.0022	0.0021	0.0018

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 115				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	132.4	22	2.6	79.6
EH (MILLIVOLTS)	346.77	236.25	216.61	294.2
OXYGEN (O) (FLD) DIS	0.19	0.21	0.05	0.35
PH (FLD)	7.16	7.09	7.12	7.1
SC (UMHOS/CM AT 25C) (FLD)	3005	3017	3114	3110
TURBIDITY (NTU) (FLD)	0.4	0.4	0.5	0.3
WATER TEMPERATURE (C) (FLD)	11.8	11.9	12.1	11.6
POTASSIUM (K) TOT	14.1	14	20	13.7 J
SULFATE (SO4)	341	337	355	347 J
CHLORIDE (CL)	149	141	150 J	145 J
FLUORIDE (F)	0.75 J	1	1.1 J	0.57 J
FLUORIDE (F) SM4500		0.18 J U		
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	0.088	<0.04
NITRATE (NO3-N)	65.6	63.6	172 J	65.7 J
ORTHOPHOSPHATE (PO4-P)	2.7	2.7	3.4	
ORTHOPHOSPHATE (PO4-P) DIS				3.4 J
ARSENIC (AS) TOT	0.25	0.24	0.24	0.25
CADMIUM (CD) TOT	0.00035 J	<0.003 J	0.0097	0.0051
SELENIUM (SE) TOT	0.0038 J	0.0041	0.0038	0.0037

STATION ID: 121 (Qtr-1); 121A (Qtr-2,3,4)				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	227	125.7	158.4	133.6
EH (MILLIVOLTS)	435.9	333.77	367.18	342.74
OXYGEN (O) (FLD) DIS	3.23	3.34	3.04	3.38
PH (FLD)	6.98	6.94	6.93	7.02
SC (UMHOS/CM AT 25 C) (FLD)	2746	2760	2895	2793
TURBIDITY (NTU) (FLD)	0.5	0.9	0.2	0.5
WATER TEMPERATURE (C) (FLD)	16.4	17.1	16.5	16.2
POTASSIUM (K) TOT	54.2	56.2	61.1	52.2 J
SULFATE (SO4)	389	383	400	403 J
CHLORIDE (CL)	499	482	509 J	498 J
FLUORIDE (F)	0.16 J	0.18	0.16 J	0.16 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	0.049	<0.04	<0.04
NITRATE (NO3-N)	16.8	19.2	17.8 J	15 J
ELEMENTAL PHOSPHORUS (P4)		<0.00005 J		0.000016 J
ORTHOPHOSPHATE (PO4-P)	0.62	0.7	0.78	
ORTHOPHOSPHATE (PO4-P) DIS				0.72 J
PHOSPHORUS (P) TOT	0.679	0.72	0.814	0.793
ARSENIC (AS) TOT	0.0097	0.0089	0.0088	0.0096
CADMIUM (CD) TOT	<0.003	<0.003 J	<0.003	<0.003
SELENIUM (SE) TOT	0.015 J	0.014	0.014	0.015

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 122				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	238.3	47.7	201.7	123.2
EH (MILLIVOLTS)	446.37	255.77	409.77	331.86
OXYGEN (O) (FLD) DIS	0.18	0.21	0.1	0.31
PH (FLD)	6.87	6.85	6.83	6.89
SC (UMHOS/CM AT 25 C) (FLD)	2578	2553	2510	2439
TURBIDITY (NTU) (FLD)	0.3	0.2	0.3	1.2
WATER TEMPERATURE (C) (FLD)	17.1	17.1	17.1	16.6
POTASSIUM (K) TOT	134	131	123	106 J
SULFATE (SO4)	370	333	348	339 J
CHLORIDE (CL)	340	301	309 J	292 J
FLUORIDE (F)	0.063 J	0.06	0.066 J	0.074 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	19.8	18.6	18.6 J	16.2 J
ELEMENTAL PHOSPHORUS (P4)		0.00058 J		0.00065 J
ORTHOPHOSPHATE (PO4-P)	9.4	7.4	10.5	8.7 J
ORTHOPHOSPHATE (PO4-P) DIS				8.7 J
PHOSPHORUS (P) TOT	9.87	10.2	10.3	9.89
ARSENIC (AS) TOT	0.056	0.051	0.05	0.051
CADMIUM (CD) TOT	<0.003	<0.003 J	0.0013 J	0.001 J
SELENIUM (SE) TOT	0.0095 J	0.0094	0.008	0.0091

STATION ID: 123				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	120.6	41.3	136.3	129.7
EH (MILLIVOLTS)	327	247.58	342.47	336.22
OXYGEN (O) (FLD) DIS	0.17	0.22	0.14	0.51
PH (FLD)	6.75	6.78	6.71	6.85
SC (UMHOS/CM AT 25 C) (FLD)	1990	1975	1999	1934
TURBIDITY (NTU) (FLD)	0.4	0.2	0.2	0.5
WATER TEMPERATURE (C) (FLD)	18.5	18.6	18.7	18.4
POTASSIUM (K) TOT	28	25.1	26.4	24 J
SULFATE (SO4)	518 J	467	505	487 J
CHLORIDE (CL)	90.2 J	92	91.4 J	88.6 J
FLUORIDE (F)	0.94 J	0.98	0.95 J	0.93 J
FLUORIDE (F) SM4500		0.86 J		0.97
TOTAL AMMONIA (NH3+NH4 AS N)	3.5	3.7 J	3.5	3.6
NITRATE (NO3-N)	2.4 J	2.8	2.8 J	2.7 J
ELEMENTAL PHOSPHORUS (P4)		<0.00005 J	0.58	0.000016 J
ORTHOPHOSPHATE (PO4-P)	0.52	0.5		
ORTHOPHOSPHATE (PO4-P) DIS				0.52 J
PHOSPHORUS (P) TOT	0.542	0.571	0.573	0.513
ARSENIC (AS) TOT	0.19	0.18	0.17	0.16
CADMIUM (CD) TOT	<0.003	<0.003 J	0.0047	0.0031
SELENIUM (SE) TOT	0.15 J	0.16	0.14	0.16

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 124				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	52.17	53.78	53.07	51.9
OXIDATION REDUCTION POTENTIAL	344.5	85.4	113.8	166.7
EH (MILLIVOLTS)	555.89	296.68	325.08	378.33
OXYGEN (O) (FLD) DIS	3.93	4.06	3.95	4.53
PH (FLD)	7.34	7.28	7.34	7.54
SC (UMHOS/CM AT 25C) (FLD)	1163	1164	1189	1176
TURBIDITY (NTU) (FLD)	0.2	0.2	0.1	0.3
WATER TEMPERATURE (C) (FLD)	14.3	14.4	14.4	14.1
POTASSIUM (K) TOT	12.2	12.5	16.6 J	11.9
SULFATE (SO4)	90.7	89.9	88.9	90 J
CHLORIDE (CL)	197	174 J	189	186 J
FLUORIDE (F)	0.74	0.78	0.76 J	0.74 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	3	3.1	3.2	3 J
ORTHOPHOSPHATE (PO4-P)	0.086	0.088	0.1	
ORTHOPHOSPHATE (PO4-P) DIS				0.089
ARSENIC (AS) TOT	0.0092	0.012	0.0086	0.0085
CADMIUM (CD) TOT	<0.003	0.00066 J	<0.003	<0.003
SELENIUM (SE) TOT	0.0035	0.0047 J	0.0034	0.0031

STATION ID: 126				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	60.01	61.72	60.9	59.76
OXIDATION REDUCTION POTENTIAL	319.9	89	118	163.4
EH (MILLIVOLTS)	528.92	298.02	326.9	372.77
OXYGEN (O) (FLD) DIS	4.41	4.22	4.27	4.9
PH (FLD)	7.46	7.37	7.45	7.61
SC (UMHOS/CM AT 25 C) (FLD)	851	859	872	846
TURBIDITY (NTU) (FLD)	0.2	3	0.2	0.3
WATER TEMPERATURE (C) (FLD)	16.3	16.3	16.4	16
POTASSIUM (K) TOT	9.6	9.3	12.4 J	8.7
SULFATE (SO4)	86.4	86.5	88.2	84.3 J
CHLORIDE (CL)	94.9	95.3 J	93.1	85.8 J
FLUORIDE (F)	0.87	0.94	0.9 J	0.88 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	2.2	2.2	2.2	2.1 J
ORTHOPHOSPHATE (PO4-P)	0.063	0.067	0.083	
ORTHOPHOSPHATE (PO4-P) DIS				0.069
ARSENIC (AS) TOT	0.0079	0.0077	0.0075	0.0073
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0024	0.0024	0.0023	0.0022

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 127				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	62.28	64.01	63.2	62.02
OXIDATION REDUCTION POTENTIAL	332.4	107.2	183.5	117.6
EH (MILLIVOLTS)	543.44	318.36	394.54	329.11
OXYGEN (O) (FLD) DIS	3.1	3.1	3.12	3.6
PH (FLD)	7.3	7.22	7.26	7.12
SC (UMHOS/CM AT 25 C) (FLD)	1745	1742	1773	1731
TURBIDITY (NTU) (FLD)	0.2	0.9	0.2	0.3
WATER TEMPERATURE (C) (FLD)	14.6	14.5	14.6	14.2
POTASSIUM (K) TOT	14	14.1	18.6 J	13.3
SULFATE (SO4)	210	194	217	227 J
CHLORIDE (CL)	324	298 J	298	298 J
FLUORIDE (F)	0.53	0.56	0.56 J	0.56 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	0.051 U	<0.04	<0.04
NITRATE (NO3-N)	5.5	5.6	5.7	5.6 J
ORTHOPHOSPHATE (PO4-P)	0.078	0.08	0.092	
ORTHOPHOSPHATE (PO4-P) DIS				0.081
ARSENIC (AS) TOT	0.0072	0.0077	0.0071	0.0067
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0065	0.0069	0.0059	0.0058

STATION ID: 128				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	65.91	67.63	66.86	65.67
OXIDATION REDUCTION POTENTIAL	327.2	95.1	110.2	132.6
EH (MILLIVOLTS)	540.73	308.51	323.26	346.37
OXYGEN (O) (FLD) DIS	3.62	3.62	3.56	4
PH (FLD)	7.25	7.14	7.36	7.19
SC (UMHOS/CM AT 25 C) (FLD)	1901	1620	1662	1759
TURBIDITY (NTU) (FLD)	0.2	0.2	0.2	0.3
WATER TEMPERATURE (C) (FLD)	12.5	12.6	12.9	12.3
POTASSIUM (K) TOT	18.1	16.7	22 J	15.3
SULFATE (SO4)	142	120	124	129 J
CHLORIDE (CL)	395 J	281 J	297	326 J
FLUORIDE (F)	0.39	0.45	0.43 J	0.4 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	0.026 J U	<0.04	<0.04
NITRATE (NO3-N)	7.3	6.9	7.5	6.9 J
ORTHOPHOSPHATE (PO4-P)	0.15	0.16	0.19	
ORTHOPHOSPHATE (PO4-P) DIS				0.16
ARSENIC (AS) TOT	0.014	0.019	0.014	0.013
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0046	0.0051	0.0037	0.0038

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 131				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	90.08	91.45	91.11	89.9
OXIDATION REDUCTION POTENTIAL	-32.8	-65.5	-116.7	-42.4
EH (MILLIVOLTS)	178.95	146.25	94.81	169.59
OXYGEN (O) (FLD) DIS	0.18	0.27	0.1	0.26
PH (FLD)	7.23	7.17	7.22	7.16
SC (UMHOS/CM AT 25C) (FLD)	1976	2008	2044	1969
TURBIDITY (NTU) (FLD)	9.1	37	52.6	31.2
WATER TEMPERATURE (C) (FLD)	14	14	14.2	13.8
POTASSIUM (K) TOT	13.5	13.6	18.2 J	13.5
SULFATE (SO4)	173	167	171	168 J
CHLORIDE (CL)	215	196 J	201	200 J
FLUORIDE (F)	80.1 U	74.8	76 J	77.6 J
FLUORIDE (F) SM4500	<1	0.13 J U	0.19 J	<0.1
TOTAL AMMONIA (NH3+NH4 AS N)	0.034 J	0.037 J U	0.028 J	0.042 U
NITRATE (NO3-N)	<0.1	0.056 J	<0.1	<0.1 J
ORTHOPHOSPHATE (PO4-P)	8	6.1	7	
ORTHOPHOSPHATE (PO4-P) DIS				6.1
ARSENIC (AS) TOT	0.052	0.049	0.047	0.044
CADMIUM (CD) TOT	0.00031 U	0.0009 J	0.0031 J	0.0015 J
SELENIUM (SE) TOT	0.00078	0.00086 J	0.00081 J	0.00068 J

STATION ID: 147				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	47.11	48.7	47.98	46.79
OXIDATION REDUCTION POTENTIAL	223.1	75.3	93.9	150.9
EH (MILLIVOLTS)	431.52	283.49	302.09	359.68
OXYGEN (O) (FLD) DIS	3.42	3.75	3.94	4.26
PH (FLD)	7.35	7.29	7.4	7.51
SC (UMHOS/CM AT 25 C) (FLD)	1053	1053	1061	1056
TURBIDITY (NTU) (FLD)	0.3	0.2	0.2	0.3
WATER TEMPERATURE (C) (FLD)	16.8	17	17	16.5
POTASSIUM (K) TOT	11.4	12.1	14 J	11.3
SULFATE (SO4)	65.8	66.5	65.1	66.1 J
CHLORIDE (CL)	165	153 J	157	156 J
FLUORIDE (F)	0.65	0.7	0.67 J	0.66 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	0.04	<0.04	<0.04
NITRATE (NO3-N)	4.3	4.4	4.3	4.3 J
ORTHOPHOSPHATE (PO4-P)	0.026 U	0.033	0.043	
ORTHOPHOSPHATE (PO4-P) DIS				0.031
ARSENIC (AS) TOT	0.0047	0.0046	0.0045	0.0043
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0046	0.0041 J	0.004	0.0039

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 148				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	49.98	51.62	50.87	49.66
OXIDATION REDUCTION POTENTIAL	307.8	71.7	156.4	162.2
EH (MILLIVOLTS)	516.94	280.6	365.42	371.69
OXYGEN (O) (FLD) DIS	2.96	2.97	3.28	3.51
PH (FLD)	7.35	7.29	7.42	7.55
SC (UMHOS/CM AT 25C) (FLD)	1210	1159	1166	1191
TURBIDITY (NTU) (FLD)	0.2	0.2	0.2	0.4
WATER TEMPERATURE (C) (FLD)	16.2	16.4	16.3	15.9
POTASSIUM (K) TOT	13	13.4	16.1 J	13.1
SULFATE (SO4)	107	89.8	85.5	96.2 J
CHLORIDE (CL)	198	163 J	182	180 J
FLUORIDE (F)	0.7	0.76	0.74 J	0.69 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	3.9	3.6	3.5	3.9 J
ORTHOPHOSPHATE (PO4-P)	0.06	0.062	0.078	
ORTHOPHOSPHATE (PO4-P) DIS				0.067
ARSENIC (AS) TOT	0.0064	0.0072	0.006	0.0059
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.0003
SELENIUM (SE) TOT	0.0056	0.0057	0.0041	0.0046

STATION ID: 149				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	50.77	52.35	51.68	50.49
OXIDATION REDUCTION POTENTIAL	316.6	81.6	115.2	161.9
EH (MILLIVOLTS)	526.21	290.74	324.34	371.87
OXYGEN (O) (FLD) DIS	4.62	4.9	5.34	5.22
PH (FLD)	7.41	7.3	7.47	7.59
SC (UMHOS/CM AT 25 C) (FLD)	933	921	972	986
TURBIDITY (NTU) (FLD)	0.2	0.2	0.2	0.5
WATER TEMPERATURE (C) (FLD)	15.8	16.2	16.2	15.5
POTASSIUM (K) TOT	11.4	11.7	14.8 J	11.3
SULFATE (SO4)	60	59.4	64.7	66.5 J
CHLORIDE (CL)	141	114 J	141	142 J
FLUORIDE (F)	0.95	1	0.96 J	0.95 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	2.1	2	2.4	2.3 J
ORTHOPHOSPHATE (PO4-P)	0.062	0.064	0.085	
ORTHOPHOSPHATE (PO4-P) DIS				0.06
ARSENIC (AS) TOT	0.0076	0.0068	0.007	0.0069
CADMIUM (CD) TOT	<0.003	0.00075 J	<0.003	<0.003
SELENIUM (SE) TOT	0.0026	0.002	0.0025	0.0023

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 154				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	50.16	51.74	51.02	49.84
OXIDATION REDUCTION POTENTIAL	308.3	81.5	158.5	142.2
EH (MILLIVOLTS)	516.96	289.92	367.04	351.22
OXYGEN (O) (FLD) DIS	4.89	4.56	5.18	5.62
PH (FLD)	7.38	7.29	7.41	7.47
SC (UMHOS/CM AT 25C) (FLD)	1137	1152	1173	1130
TURBIDITY (NTU) (FLD)	0.2	0.2	0.2	0.5
WATER TEMPERATURE (C) (FLD)	16.6	16.8	16.7	16.3
POTASSIUM (K) TOT	13.2	14.4 J	13.8 J	12.2
SULFATE (SO4)	55.1	55.7	54.3	54.6 J
CHLORIDE (CL)	208 J	190 J	205	191 J
FLUORIDE (F)	0.98	1	0.99	0.98 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	2.8	2.8	2.8	2.7 J
ORTHOPHOSPHATE (PO4-P)	0.024 U	0.025	0.039	
ORTHOPHOSPHATE (PO4-P) DIS				0.028
ARSENIC (AS) TOT	0.0046	0.0043	0.0045	0.0042
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0032	0.0032	0.0031	0.0029

STATION ID: 155				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	174.7	20	182.4	149.1
EH (MILLIVOLTS)	385.02	230.21	392.61	359.9
OXYGEN (O) (FLD) DIS	0.19	0.22	0.13	1.35
PH (FLD)	7.45	7.33	7.23	7.49
SC (UMHOS/CM AT 25 C) (FLD)	2575	2655	2637	2376
TURBIDITY (NTU) (FLD)	0.5	0.4	0.7	0.5
WATER TEMPERATURE (C) (FLD)	15.2	15.3	15.3	14.8
POTASSIUM (K) TOT	477	427	411	361 J
SULFATE (SO4)	258	223	246	215 J
CHLORIDE (CL)	183	167	193 J	157 J
FLUORIDE (F)	0.077 J	0.017 J	0.13 J	0.084 J
FLUORIDE (F) SM4500	<1	0.22 J U	0.18 J	0.05 J
TOTAL AMMONIA (NH3+NH4 AS N)	0.5	0.51 J	0.39	0.47
NITRATE (NO3-N)	7.5	6.8	5.6 J	6.2 J
ELEMENTAL PHOSPHORUS (P4)		<0.00005 J		<0.00005 J
ORTHOPHOSPHATE (PO4-P)	16.9	14.3	17.2	
ORTHOPHOSPHATE (PO4-P) DIS				16.1 J
ARSENIC (AS) TOT	0.11	0.098	0.095	0.12
CADMIUM (CD) TOT	<0.003	<0.003 J	0.0028 J	0.0022 J
SELENIUM (SE) TOT	0.0072 J	0.0064	0.0048	0.006

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 156				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	98.57	99.67	99.55	98.42
OXIDATION REDUCTION POTENTIAL	-153.6	-170.3	-189.5	-158.3
EH (MILLIVOLTS)	56.13	39.07	19.76	51.67
OXYGEN (O) (FLD) DIS	0.18	0.18	0.1	0.41
PH (FLD)	7.21	7.22	7.25	7.37
SC (UMHOS/CM AT 25 C) (FLD)	5579	5489	5584	5490
TURBIDITY (NTU) (FLD)	0.3	0.4	0.4	0.5
WATER TEMPERATURE (C) (FLD)	15.7	16	16.1	15.5
POTASSIUM (K) TOT	1280	1160	1210	1090 J
SULFATE (SO4)	254	226	249	234 J
CHLORIDE (CL)	363	317	345 J	318 J
FLUORIDE (F)	44.5 J	36.5	41.6 J	45.8 J
FLUORIDE (F) SM4500	<1	0.23 J U	0.12 J	0.073 J
TOTAL AMMONIA (NH3+NH4 AS N)	11.8	11 J	9.8	10
NITRATE (NO3-N)	1.8	<0.1	<0.1 J	0.07 J
ELEMENTAL PHOSPHORUS (P4)		<0.00005 J		<0.00005 J
ORTHOPHOSPHATE (PO4-P)	170	139	181	
ORTHOPHOSPHATE (PO4-P) DIS				172 J
ARSENIC (AS) TOT	0.15	0.14	0.14	0.16
CADMIUM (CD) TOT	<0.003	<0.003 J	0.0045	0.003 J
SELENIUM (SE) TOT	<0.0025 J	0.00059	0.00023 J	0.0009

STATION ID: 157				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	-111.2	-120.7	-137.9	-94.3
EH (MILLIVOLTS)	97.82	88.08	70.64	114.84
OXYGEN (O) (FLD) DIS	0.17	0.17	0.21	0.36
PH (FLD)	6.89	6.87	6.87	6.95
SC (UMHOS/CM AT 25 C) (FLD)	2886	3145	3003	2821
TURBIDITY (NTU) (FLD)	0.2	0.3	0.2	0.6
WATER TEMPERATURE (C) (FLD)	16.3	16.5	16.7	16.2
POTASSIUM (K) TOT	255	303	299	222 J
SULFATE (SO4)	284 J	261	303	302 J
CHLORIDE (CL)	243 J	228	241 J	224 J
FLUORIDE (F)	27.7 J	32.4	27.6 J	24.6 J
FLUORIDE (F) SM4500	<1	0.3 J U	0.27 J	0.26
TOTAL AMMONIA (NH3+NH4 AS N)	2.2	2.5 J	2.3	1.9
NITRATE (NO3-N)	0.054 J	0.056 J	<0.1 J	<0.1 J
ELEMENTAL PHOSPHORUS (P4)		<0.00005 J		<0.00005 J
ORTHOPHOSPHATE (PO4-P)	44.4	36.6	44.2	
ORTHOPHOSPHATE (PO4-P) DIS				37.8 J
ARSENIC (AS) TOT	0.096	0.095	0.09	0.094
CADMIUM (CD) TOT	<0.003	<0.003 J	0.0028 J	0.0015 J
SELENIUM (SE) TOT	<0.0025 J	0.00032 J	<0.0005 J	0.00036 J

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 158				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	99.57	100.54	100.56	99.45
OXIDATION REDUCTION POTENTIAL	216.1	78.8	150.7	108.8
EH (MILLIVOLTS)	425	287.7	359.36	317.94
OXYGEN (O) (FLD) DIS	2.92	2.95	2.68	2.98
PH (FLD)	6.79	6.77	6.73	6.79
SC (UMHOS/CM AT 25C) (FLD)	2101	2099	2149	2161
TURBIDITY (NTU) (FLD)	0.4	0.3	0.8	3.1
WATER TEMPERATURE (C) (FLD)	16.4	16.4	16.6	16.2
POTASSIUM (K) TOT	20.7	19.1	20.6	17.8 J
SULFATE (SO4)	578	545	578	584 J
CHLORIDE (CL)	109	97.2	105 J	105 J
FLUORIDE (F)	0.16 J	0.17	0.16 J	0.14 J
TOTAL AMMONIA (NH3+NH4 AS N)	0.03 J	<0.04	<0.04	<0.04
NITRATE (NO3-N)	2.8	2.9	3 J	3 J
ELEMENTAL PHOSPHORUS (P4)		<0.00005 J		<0.00005 J
ORTHOPHOSPHATE (PO4-P)	0.07	0.082 U	0.1	
ORTHOPHOSPHATE (PO4-P) DIS				0.088 J
ARSENIC (AS) TOT	0.013	0.011	0.012	0.012
CADMIUM (CD) TOT	<0.003	<0.003 J	<0.003	<0.003
SELENIUM (SE) TOT	0.0052 J	0.0054	0.0048	0.0052

STATION ID: 165				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	67.8	69.16	68.85	67.61
OXIDATION REDUCTION POTENTIAL	234.5	45.3	121.1	141
EH (MILLIVOLTS)	448.03	258.83	334.4	354.89
OXYGEN (O) (FLD) DIS	0.66	0.32	0.58	1.37
PH (FLD)	7.37	7.24	7.31	7.45
SC (UMHOS/CM AT 25C) (FLD)	1401	2085	1732	1283
TURBIDITY (NTU) (FLD)	0.3	0.2	0.3	0.3
WATER TEMPERATURE (C) (FLD)	12.5	12.5	12.7	12.2
POTASSIUM (K) TOT	12.1	14.5	13.2	10.7 J
SULFATE (SO4)	152	232	193	129 J
CHLORIDE (CL)	247	365	310 J	206 J
FLUORIDE (F)	0.18 J	0.2	0.21 J	0.18 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	0.029 J U
NITRATE (NO3-N)	4	5.7	4.9 J	3.6 J
ORTHOPHOSPHATE (PO4-P)	0.26	0.28	0.28	
ORTHOPHOSPHATE (PO4-P) DIS				0.25 J
ARSENIC (AS) TOT	0.026	0.023	0.023	0.026
CADMIUM (CD) TOT	<0.003	<0.003 J	<0.003	<0.003
SELENIUM (SE) TOT	0.0053 J	0.0085	0.0064	0.0049

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 166				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	73.84	75.45	74.86	73.67
OXIDATION REDUCTION POTENTIAL	191	35.1	32	90.4
EH (MILLIVOLTS)	405.37	249.47	246.01	305.24
OXYGEN (O) (FLD) DIS	0.18	0.31	0.09	0.28
PH (FLD)	7.13	7.08	7.07	7.09
SC (UMHOS/CM AT 25C) (FLD)	2117	2237	2548	2145
TURBIDITY (NTU) (FLD)	0.2	0.5	0.2	0.3
WATER TEMPERATURE (C) (FLD)	11.8	11.8	12.1	11.4
POTASSIUM (K) TOT	30.7	31.1	45.7	29.3 J
SULFATE (SO4)	191	203	237	192 J
CHLORIDE (CL)	229	234	257 J	215 J
FLUORIDE (F)	0.68 J	0.64	0.67 J	0.67 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	38.9	38	43.4 J	34.4 J
ORTHOPHOSPHATE (PO4-P)	0.26	0.3	0.31	
ORTHOPHOSPHATE (PO4-P) DIS				0.26 J
ARSENIC (AS) TOT	0.019	0.018	0.018	0.019
CADMIUM (CD) TOT	<0.003	<0.003 J	0.00096 J U	<0.003
SELENIUM (SE) TOT	0.0058 J	0.006	0.0057	0.0057

STATION ID: 167				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	94.75	95.5	95.98	94.89
OXIDATION REDUCTION POTENTIAL	175.4	68.7	187.9	125.8
EH (MILLIVOLTS)	386.32	279.74	398.82	337.08
OXYGEN (O) (FLD) DIS	0.15	0.34	0.08	0.24
PH (FLD)	7.24	7.09	7.21	7.2
SC (UMHOS/CM AT 25C) (FLD)	1467	1533	1543	1459
TURBIDITY (NTU) (FLD)	0.6	0.8	0.2	0.7
WATER TEMPERATURE (C) (FLD)	14.7	14.6	14.7	14.4
POTASSIUM (K) TOT	13.3	12.6	13.1	11.6 J
SULFATE (SO4)	155	141	149	148 J
CHLORIDE (CL)	151	133	142 J	142 J
FLUORIDE (F)	1.5 J	<0.05	0.93 J	1 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	0.066 J	0.14	0.061 J	<0.1 J
ORTHOPHOSPHATE (PO4-P)	5	4.4	5.5	
ORTHOPHOSPHATE (PO4-P) DIS				4.2 J
ARSENIC (AS) TOT	0.051	0.046	0.044	0.048
CADMIUM (CD) TOT	0.00065 J	<0.003 J	0.0009 J	<0.003
SELENIUM (SE) TOT	0.0024 J	0.0022	0.0019	0.0021

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 168				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	258.3	159.3	231.9	158
EH (MILLIVOLTS)	471	372.24	443.65	371.53
OXYGEN (O) (FLD) DIS	0.55	0.41	0.42	0.88
PH (FLD)	7.08	7.11	7.06	7.13
SC (UMHOS/CM AT 25C) (FLD)	3229	3034	3055	3124
TURBIDITY (NTU) (FLD)	0.5	0.7	0.4	0.6
WATER TEMPERATURE (C) (FLD)	13.2	13	14	12.5
POTASSIUM (K) TOT	18.1	16.6	25	16.1 J
SULFATE (SO4)	1450	1350	1320	1370 J
CHLORIDE (CL)	57.9	53.7	53.9 J	52.6 J
FLUORIDE (F)	3.8 J	3.5	3.7 J	3.7 J
TOTAL AMMONIA (NH3+NH4 AS N)	0.14	0.41 J	0.44	0.31 U
NITRATE (NO3-N)	24.9	20.6	22.3 J	23 J
ORTHOPHOSPHATE (PO4-P)	0.093	0.095	0.11	
ORTHOPHOSPHATE (PO4-P) DIS				0.095 J
ARSENIC (AS) TOT	0.024	0.022	0.022	0.023
CADMIUM (CD) TOT	<0.003	<0.003 J	0.001 J U	<0.003
SELENIUM (SE) TOT	0.073 J	0.076	0.064	0.074

STATION ID: 171				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	55.96	57.35	56.91	55.68
OXIDATION REDUCTION POTENTIAL	343.3	90.7	104.8	142.6
EH (MILLIVOLTS)	556	303.28	317.38	355.66
OXYGEN (O) (FLD) DIS	5.81	5.73	5.67	6.27
PH (FLD)	7.36	7.26	7.44	7.49
SC (UMHOS/CM AT 25C) (FLD)	1212	1218	1235	1226
TURBIDITY (NTU) (FLD)	0.1	0.2	0.2	0.4
WATER TEMPERATURE (C) (FLD)	13.2	13.3	13.3	12.9
POTASSIUM (K) TOT	20.7	22.6 J	21.2 J	18.9
SULFATE (SO4)	89.1	88.9	89.7	89.2 J
CHLORIDE (CL)	220 J	193 J	205	202 J
FLUORIDE (F)	0.5	0.54	0.51	0.52 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	5.3	5.4	5.8	5.8 J
ORTHOPHOSPHATE (PO4-P)	0.1	0.1	0.12	
ORTHOPHOSPHATE (PO4-P) DIS				0.11
ARSENIC (AS) TOT	0.018	0.018	0.019	0.017
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0029	0.0027	0.003	0.0027

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 172				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	242.5	85.6	112.7	146.7
EH (MILLIVOLTS)	455.91	298.66	325.76	360.35
OXYGEN (O) (FLD) DIS	3.31	3.4	3.78	4.2
PH (FLD)	7.35	7.13	7.39	7.41
SC (UMHOS/CM AT 25C) (FLD)	1127	1127	1132	1126
TURBIDITY (NTU) (FLD)	0.2	0.3	0.2	0.4
WATER TEMPERATURE (C) (FLD)	12.6	12.9	12.9	12.4
POTASSIUM (K) TOT	24	25.7 J	24.8 J	22.6
SULFATE (SO4)	73.1	73.9	71.7	72.2 J
CHLORIDE (CL)	133	119 J	130	129 J
FLUORIDE (F)	0.54	0.59	0.56	0.54 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	9.7	8.4	9.5	9 J
ORTHOPHOSPHATE (PO4-P)	0.34	0.3	0.38	
ORTHOPHOSPHATE (PO4-P) DIS				0.3
ARSENIC (AS) TOT	0.022	0.021	0.022	0.021
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.004	0.0037	0.0042	0.0035

STATION ID: 173				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	55.53	57.05	56.46	55.26
OXIDATION REDUCTION POTENTIAL	369.4	87.3	148.2	133.2
EH (MILLIVOLTS)	577.7	295.49	356.39	341.86
OXYGEN (O) (FLD) DIS	5.29	5.72	5.87	7.12
PH (FLD)	7.46	7.43	7.52	7.57
SC (UMHOS/CM AT 25C) (FLD)	1218	1240	1298	1261
TURBIDITY (NTU) (FLD)	0.9	0.3	0.5	3.3
WATER TEMPERATURE (C) (FLD)	16.9	17	17	16.6
POTASSIUM (K) TOT	12.6	14 J	13.8 J	12.4
SULFATE (SO4)	67.8	66.7	65.9	70.2 J
CHLORIDE (CL)	243 J	218 J	258	238 J
FLUORIDE (F)	0.81	0.84	0.8	0.82 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	3.3	3.5	3.3	3.1 J
ORTHOPHOSPHATE (PO4-P)	0.018 U	0.022	0.032	
ORTHOPHOSPHATE (PO4-P) DIS				0.024
ARSENIC (AS) TOT	0.0033	0.0032	0.0033	0.0032
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0042	0.0046	0.0044	0.0042

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 174				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	49.66	51.07	50.51	49.36
OXIDATION REDUCTION POTENTIAL	431.7	82.7	189.4	109.5
EH (MILLIVOLTS)	640.12	291	397.82	318.28
OXYGEN (O) (FLD) DIS	4.8	4.65	4.82	5.68
PH (FLD)	7.4	7.26	7.41	7.41
SC (UMHOS/CM AT 25 C) (FLD)	1235	1240	1257	1256
TURBIDITY (NTU) (FLD)	0.4	0.6	0.2	0.7
WATER TEMPERATURE (C) (FLD)	16.8	16.9	16.8	16.5
POTASSIUM (K) TOT	11.1	12.8 J	11.5 J	11.3
SULFATE (SO4)	93.8	93.8	93.4	95.4 J
CHLORIDE (CL)	217 J	190 J	206	211 J
FLUORIDE (F)	0.68	0.77	0.74	0.72 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	4.6	4.7	4.7	4.6 J
ORTHOPHOSPHATE (PO4-P)	0.024 U	0.028	0.052	
ORTHOPHOSPHATE (PO4-P) DIS				0.028
ARSENIC (AS) TOT	0.0037	0.0035	0.0035	0.0033
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.005	0.0049	0.005	0.0047

STATION ID: 177				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	47.77	49.3	48.6	47.46
OXIDATION REDUCTION POTENTIAL	337	79.3	144.9	128.4
EH (MILLIVOLTS)	544.95	287.13	352.73	336.59
OXYGEN (O) (FLD) DIS	4.02	3.67	3.98	4.56
PH (FLD)	7.34	7.25	7.39	7.42
SC (UMHOS/CM AT 25C) (FLD)	1124	1133	1136	1133
TURBIDITY (NTU) (FLD)	0.3	0.2	0.5	0.5
WATER TEMPERATURE (C) (FLD)	17.2	17.3	17.3	17
POTASSIUM (K) TOT	12	13.3 J	12.3 J	11.8
SULFATE (SO4)	70.6	71.6	70.3	71.3 J
CHLORIDE (CL)	193 J	169 J	182	180 J
FLUORIDE (F)	0.66	0.72	0.69	0.68 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	4.1	4.2	4.2	4.2 J
ORTHOPHOSPHATE (PO4-P)	0.025 U	0.028	0.04	
ORTHOPHOSPHATE (PO4-P) DIS				0.026
ARSENIC (AS) TOT	0.0042	0.0042	0.0044	0.0041
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0043	0.0042	0.0045	0.0041

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

2015 Groundwater Quality

STATION ID: 178				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	54.04	55.08	55.06	54.1
OXIDATION REDUCTION POTENTIAL	354.4	89.7	203.2	146.7
EH (MILLIVOLTS)	564.13	299.31	412.81	356.31
OXYGEN (O) (FLD) DIS	2.75	2.5	2.5	4.57
PH (FLD)	7.15	7.16	7.19	7.43
SC (UMHOS/CM AT 25C) (FLD)	2858	3104	3016	1868
TURBIDITY (NTU) (FLD)	0.3	0.8	0.5	0.8
WATER TEMPERATURE (C) (FLD)	15.7	15.8	15.8	15.8
POTASSIUM (K) TOT	20.5	24.3 J	23.1 J	15.3
SULFATE (SO4)	394	374	407	227 J
CHLORIDE (CL)	612 J	565 J	595	321 J
FLUORIDE (F)	0.29	0.3	0.3	0.3 J
FLUORIDE (F) SM4500		0.29 J U		0.34
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	5.8	5.7	5.9	3.5 J
ORTHOPHOSPHATE (PO4-P)	0.035 U	0.039	0.049	
ORTHOPHOSPHATE (PO4-P) DIS				0.038
ARSENIC (AS) TOT	0.0092	0.0088	0.009	0.01
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0057	0.006	0.0062	0.0038

STATION ID: 180				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	NO ACCESS	NO ACCESS	NO ACCESS	NO ACCESS
OXIDATION REDUCTION POTENTIAL	226.3	82.6	164	149.6
EH (MILLIVOLTS)	438.76	294.11	375.63	362.18
OXYGEN (O) (FLD) DIS	2	4.14	4.7	2.56
PH (FLD)	7.33	7.19	7.34	7.5
SC (UMHOS/CM AT 25C) (FLD)	1562	1784	1678	1213
TURBIDITY (NTU) (FLD)	0.2	0.3	0.4	0.5
WATER TEMPERATURE (C) (FLD)	13.4	14.2	14.1	13.3
POTASSIUM (K) TOT	35.3	32.8	29 J	33.4
SULFATE (SO4)	108	129	133	74.9 J
CHLORIDE (CL)	128	130 J	135	105 J
FLUORIDE (F)	0.59	0.48	0.53	0.92 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	37.7	42.6	35.6	17.8 J
ORTHOPHOSPHATE (PO4-P)	0.45	0.44	0.38	
ORTHOPHOSPHATE (PO4-P) DIS				0.4
ARSENIC (AS) TOT	0.041	0.044	0.039	0.04
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	0.00086 J
SELENIUM (SE) TOT	0.0036	0.0044 J	0.0038	0.0031

All results are in mg/l unless otherwise noted.

Qualifiers:
 < - Measured Not Detected
 U - Qualified Not Detected
 J - Estimated

2015 Groundwater Quality

STATION ID: 183				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
DEPTH TO WATER LEVEL (FEET)	100.19	101.18	101.21	100.06
OXIDATION REDUCTION POTENTIAL	188.4	62.6	133.8	79.8
EH (MILLIVOLTS)	398.13	272.33	343.06	289.65
OXYGEN (O) (FLD) DIS	4.49	4.74	4.93	4.85
PH (FLD)	7.31	7.2	7.25	7.22
SC (UMHOS/CM AT 25C) (FLD)	1167	1193	1190	1186
TURBIDITY (NTU) (FLD)	1.5	0.9	0.9	2.6
WATER TEMPERATURE (C) (FLD)	15.7	15.7	16.1	15.6
POTASSIUM (K) TOT	12.9	12.7	13.5	11.9 J
SULFATE (SO4)	231	211	215	215 J
CHLORIDE (CL)	104	104	103 J	98.7 J
FLUORIDE (F)	0.32 J	0.34	0.32 J	0.29 J
TOTAL AMMONIA (NH3+NH4 AS N)	<0.04	<0.04	<0.04	<0.04
NITRATE (NO3-N)	1.8	1.9	1.8 J	1.7 J
ELEMENTAL PHOSPHORUS (P4)		<0.00005 J		<0.00005 J
ORTHOPHOSPHATE (PO4-P)	0.057	0.053 U	0.07	
ORTHOPHOSPHATE (PO4-P) DIS				0.055 J
ARSENIC (AS) TOT	0.017	0.014	0.015	0.016
CADMIUM (CD) TOT	<0.003	<0.003 J	<0.003	<0.003
SELENIUM (SE) TOT	0.005 J	0.006	0.0043	0.0044

STATION ID: BATISTE SPRING				
CONSTITUENT	Conc. Qual Qtr-1-2015	Conc. Qual Qtr-2-2015	Conc. Qual Qtr-3-2015	Conc. Qual Qtr-4-2015
FLOW (CFS)	1.8	15	1	1
OXIDATION REDUCTION POTENTIAL	103.1	19	43.3	-0.5
EH (MILLIVOLTS)	316.28	232.41	256.6	212.68
OXYGEN (O) (FLD) DIS	3.84	6.07	6.7	5.31
PH (FLD)	7.45	7.85	8.06	7.52
SC (UMHOS/CM AT 25C) (FLD)	746	592	601	725
TURBIDITY (NTU) (FLD)	0.2	0.5	0.3	0.3
WATER TEMPERATURE (C) (FLD)	12.8	12.6	12.7	12.8
POTASSIUM (K) TOT	9.2	5.9	6.8	7.7 J
SULFATE (SO4)	93.3	59.9	58.8	83.7 J
CHLORIDE (CL)	42.9	30.2	30.2 J	39.5 J
FLUORIDE (F)	0.4 J	0.53	0.54 J	0.4 J
TOTAL AMMONIA (NH3+NH4 AS N)	0.063	<0.04	<0.04	0.063 U
NITRATE (NO3-N)	4.5	2.8	2.8 J	4.2 J
ORTHOPHOSPHATE (PO4-P)	2.5	0.73	0.76	
ORTHOPHOSPHATE (PO4-P) DIS				1.8 J
ARSENIC (AS) TOT	0.011	0.0044	0.0046	0.0094
CADMIUM (CD) TOT	<0.003	<0.003	<0.003	<0.003
SELENIUM (SE) TOT	0.0029 J	0.001	0.0012	0.0027

All results are in mg/l unless otherwise noted.

Qualifiers:

< - Measured Not Detected

U - Qualified Not Detected

J - Estimated

APPENDIX C

**EPA GROUNDWATER MONITORING REDUCTION LETTER
JUNE 13, 1995**



June 13, 1995



Reply to
Attn. of: HW-106

Mr J. David Buttelman
FMC Corporation
Phosphorous Chemicals Division
Pocatello, Idaho 83205

Re: Proposed RCRA Ground-Water Monitoring Reductions for the FMC
Pocatello Facility, EPA ID# 07092 9518

Dear Mr. Buttelman:

In response to your May 22, 1995 letter, regarding a request for approval of a reduced analytical parameter list in your quarterly ground-water monitoring program the Environmental Protection Agency (Agency) has completed a technical review of the proposal. Under Part 265.93 (d) (4) and (7), the facility is responsible for determining the rate and extent of migration of the hazardous constituents in the groundwater and the concentrations of the waste constituents. The RCRA interim status ground-water program is largely self implementing. For this reason the Agency is unable to respond to requests for specific "approval" of your ground-water assessment plan components.

While the Agency does not offer specific approval of your proposed list, I would like to provide one technical comment. The reasons for eliminating parameters provided in your May 22 letter are similar to those developed in depth during previous meetings. With the exception of those arguments pertaining to cadmium, the reasons given are generally acceptable to the Agency. However, I believe FMC ought to consider retaining cadmium because it is a major component of your waste streams and could be reasonably expected to be present in site ground water. Acting within a technical support role, the Agency recommends that cadmium remain on the proposed analyte list.

The proposed analyte list is a significant reduction from 34 inorganic parameters and 4 radiological parameters to 10 inorganic parameters with no radiological parameters. The Agency agrees that this reduction appears appropriate at this stage of site characterization. It is, however, possible that FMC will further refine the conceptual model for the complex hydrogeologic system under study at this site. As this occurs, the facility may select additional parameters to be added to the list and should not hesitate to do so.

Page Two

FMC Pocatello RCRA Analyte List, amended as discussed above:

Heavy Metals -- Arsenic, Cadmium, and Selenium
Water Quality -- Chloride, Fluoride, Potassium, Sulfate,
Ammonia, Nitrate, and Orthophosphate
Field Parameters -- pH, Turbidity, Temperature and
Specific Conductance

Should you have any questions or comments regarding this letter, or the effect of this program with regard to your site, please feel free to contact me at (206) 553-1262.

Sincerely,



Curt Black, Hydrogeologist
RCRA Permits Team
Hazardous Waste Division

cc: Sylvia Burges
Bill Adams
Mark Masarik, Idaho
Operations Office

APPENDIX D

**DATA VALIDATION AND USABILITY SUMMARIES
2015 RCRA GROUNDWATER LABORATORY ANALYSES
(IN CD POCKET)**

DATA VALIDATION/USABILITY SUMMARY

February 2015
RCRA Groundwater Sampling
Metals and Wet Chemistry Parameters

Prepared for:

FMC Corporation
Pocatello, Idaho Plant
P.O. Box 4111
Pocatello, ID 83202

Prepared by:

Hydrometrics, Inc.
3020 Bozeman Avenue
Helena, MT 59601

and

Environmental Chemistry Consultants, Inc.
10146 Banner Rd., S.E.
Olalla, WA 98359

21 March 2015

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	ii
LIST OF APPENDICES	iii
LIST OF DATA PACKAGES	iii
1. INTRODUCTION	1-2
2. SUMMARY OF USABILITY ISSUES	2-1
3. DATA VALIDATION RESULTS	3-1
3.1 PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS AND CONSISTENCY	3-1
3.1.1 PRECISION	3-1
3.1.2 ACCURACY	3-3
3.1.3 REPRESENTATIVENESS.....	3-6
3.1.4 COMPARABILITY	3-7
3.1.5 COMPLETENESS.....	3-7
3.1.6 CONSISTENCY	3-7
4. REFERENCES	4-1

LIST OF TABLES

	<u>Page</u>
TABLE 1-1. FIRST QUARTER 2015 RCRA MONITORING EVENT- PARAMETERS AND ANALYTICAL METHODS.....	1-3
TABLE 2-1. DATA QUALITY SUMMARY: FMC GROUNDWATER MONITORING PROGRAM	2-2

LIST OF APPENDICES

APPENDIX A	TECHNICAL REVIEW REPORTS
APPENDIX B	DEFINITION OF DATA QUALIFIERS
APPENDIX C	GLOSSARY OF ACRONYMS

LIST OF DATA PACKAGES

SDG 10297680
SDG 10298055

ENVIRONMENTAL CHEMISTRY CONSULTANTS, INC.

10146 Banner Rd., S.E.
Olalla, WA 98359

Tel: (253) 509-4568

e-mail:

brucekw327@live.com

Data Validation/Usability Report
Groundwater Samples
FMC Corporation, Pocatello, Idaho
RCRA Groundwater Monitoring Program
First Quarter 2015

SDGs 10297680 and 10298055

21 March 2015

Prepared by: Bruce K. Wallin, PhD

1. INTRODUCTION

This memo summarizes the Site Chemist's usability evaluation of the technically reviewed groundwater results generated by Pace Analytical Services, Inc., Minneapolis, MN (PASI-M) and Pace Analytical Services, Inc., Virginia, MN (PASI-V) for FMC's first quarter 2015 Resource Conservation and Recovery Act (RCRA) sampling event for the laboratory sample SDGs listed above. The samples were collected 24-26 February 2015. All samples were analyzed for elements and wet chemistries.

For elements, laboratory analyses were performed on all samples in accordance with the U.S. Environmental Protection Agency (USEPA) SW-846 Methods 6010B (cadmium, potassium, and phosphorus), 6020 (arsenic and selenium), and Method 300.0 for Chemical Analysis of Water and Wastes (MCAWW) for chloride, fluoride, nitrate, and sulfate; orthophosphate by SM4500P-E from Standard Methods for the Examination of Water and Wastewater, ammonia by MCAWW Method 350.1, and fluoride from wells providing evidence of interference in Method 300.0 were also analyzed by SM4500F-C. All of the above methods are hereafter referred to as "Methods". A list of the parameters and associated methods utilized is provided in Table 1. All parameters except phosphorus were analyzed by PASI-MN and phosphorus in selected samples was analyzed by PASI-V.

TABLE 1-1
FIRST QUARTER 2015 RCRA MONITORING EVENT-PARAMETERS AND ANALYTICAL METHODS

PARAMETER	SM (1) METHOD	MCAWW(2) METHOD	SW-846(3) METHOD
Cd, P, and K			6010B
As, Se			6020
ammonia - N		350.1	
chloride			9056A
fluoride	4500-F-C		9056A
nitrate			9056A
ortho-phosphate	4500-P E		
sulfate			9056A

NOTES:

- (1) "Standard Methods for the Examination of Water and Wastewater",
- (2) "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.
- (3) "Test Methods for Evaluating Solid Waste, Physical/
Chemical Methods", Third Edition, November 1996 and
subsequent revisions.

The data were technically reviewed based on method specifications, and laboratory-developed performance criteria by adapting the procedures set forth in the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, USEPA Office of Solid Waste and Emergency Response, EPA-540-R-04-004, October 2004, and USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, Final, OSWER 9240.1-34, EPA540-R-00-006, June 2001 (Guidelines).

For all parameters, a Level III technical review was performed for these SDGs, which included a review/evaluation of all quality control summary forms. Raw data, preparation logs, instrument printouts, notebook records and forensic deliverables provided by the laboratory were not evaluated.

A detailed description and summary of these efforts is provided in the Technical Review Reports in Appendix A.

The following validation/usability report is the result of a collective assessment of all information associated with the analytical results available. The information includes the project-specific data quality objectives (DQOs) specified in the RCRA Interim Status Groundwater Monitoring Plan, as updated in the RCRA Post Closure Plans (FMC, 1999), as well as historical data, site knowledge, and the technical review results.

2. SUMMARY OF USABILITY ISSUES

The data technical review reports indicate which laboratory results are considered non-compliant when compared to the requirements set forth in the relevant documents. However, most of these exceptions are minor quality control problems and do not affect data usability. The cases where the exceptions may impact data usability are discussed in the following sections. In most cases these problems are typical analytical difficulties or are the result of sample matrix problems. A summary of data quality goals and observations is provided in Table 2-1.

DATA USABILITY SUMMARY

For SDG 10297680 sample 502131 was analyzed for fluoride by both the IC and ISE Methods. Dissimilar results were reported, therefore, only the result reported from the ISE Method should be used.

For SDG 10298055 samples 502156 and 502157 were analyzed for fluoride by both the IC and ISE Methods. Dissimilar results were reported, therefore, only the results reported from the ISE Method should be used.

For this event no additional data were considered unusable.

TABLE 2-1. DATA QUALITY SUMMARY: FMC GROUNDWATER MONITORING PROGRAM
FIRST QUARTER 2019 RCRA SAMPLING EVENT

DATA QUALITY INDICATOR	PURPOSE	METHOD OF MEASUREMENT & EVALUATION	GOAL	SUMMARY OF RESULTS
Precision	Reproducibility of results	1. Collocated samples 2. MS/MSD - Laboratory replicates	S & D >5RL, RPD <30, S &/or D <5RL, S-D <2RL S & D >5RL, RPD <20, S &/or D <5RL, S-D <RL	All criteria were met - no flagging was required or deemed necessary. All criteria were met - no flagging was required or deemed necessary.
Accuracy	Proximity of result to true value	1. Calibration 2. Laboratory control samples 3. Matrix spikes/Serial Dilutions	Meet method/guidance criteria Meet lab-developed or method criteria Meet lab-developed or method criteria	All criteria were met - no flagging was required or deemed necessary. All criteria were met - no flagging was required or deemed necessary. MS/MSD recoveries of chloride mixed. Regrit for 502114 estimated (J). MS/MSD recoveries 502114 arsenic high. Positive result flagged as estimated (J+). SDG 10298055 serial dilution selenium 11.4%. All results flagged as estimated (J) - low bias.
Representativeness	Sample integrity and sampling precision	1. Collocated samples 2. Blanks 3. Holding times 4. Preservation	S & D >5RL, RPD <30, S &/or D <5RL, S-D <2RL Sample results ND or >5X blank Per method Per method	See item 1 above. Positive results for cadmium and ophosphate in some samples flagged as not-detected (U) due to blank contamination. Should be considered maximum potential concentrations. No deviations requiring actions.
Comparability	Consistent practices	Use of and adherence to appropriate analytical methods	Compliance with required USEPA methods	All criteria were met - no flagging was required or deemed necessary. Method compliance achieved, goal met for all samples.
Completeness	Obtain intended information from the event	Comparison of planned vs usable data obtained	>90% of planned	Completeness 100%
Consistency	Expansion of historical database	Comparison with historical statistics	Meet completeness objective	Modest outliers, no significant trends apparent. Continue evaluation.

3. DATA VALIDATION RESULTS

To determine the ultimate utility of data, the following indicators were evaluated:

3.1 PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS AND CONSISTENCY

3.1.1 PRECISION

Precision is a quantitative determination of the reproducibility of an analytical value. For this program, collocated samples are collected to assess overall precision of the sampling, preparation and analytical process, and matrix spike/matrix spike duplicates are required to address aliquoting reproducibility in order to provide information on matrix reproducibility otherwise unobtainable from samples reported below the reporting limits. Matrix spikes also provide an indication of the accuracy of native results: this will be discussed in the accuracy section.

The collocated samples further address the ability to obtain a representative sample of the medium studied, this will be discussed further in the representativeness section. For elemental parameters, the methods require the preparation of laboratory replicates at a specified frequency to address aliquoting precision.

For laboratory replicates the Guidelines specify the utilization of difference criteria for samples providing values below a limiting value and relative percent difference (RPD) criteria for samples providing values above a limiting value. The Guidelines utilize 5X the contract required detection limit (CRDL). These specifications are as follows:

When either one or both of the analyses provide results below the limiting value, the following criteria apply:

$$|S - R| \leq \text{CRDL}$$

Where: S = sample value
R = replicate sample value

When both of the analyses provide results above or equal to the limiting value, the following criteria apply:

$$\text{RPD} = (|S - R| / (S + R)) \times 100 \leq 20$$

Where: RPD = Relative Percent Difference

The QAPjP provides an RPD specification of 20 percent for laboratory replicates for elements, but does not provide specific criteria for low level results or collocated samples. The Guidelines do not provide precision criteria for collocated samples. The technical reviewer utilized the 20 percent RPD criteria specified in the QAPjP and Guidelines and the low-level criteria above specified in the Guidelines with the substitution of the laboratory reporting limit (RL) for the CRDL where they differed. For collocated samples, the technical reviewer utilized the 2 RL and RPD <30 criteria specified in the USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses, June 13, 1988.

For this event all replicate sample precision was within specification.

For SDG 10297680 sample 502131 was analyzed for fluoride by both the IC and ISE Methods. Dissimilar results were reported, therefore, only the result reported from the ISE Method should be used.

For SDG 10298055 samples 502156 and 502157 were analyzed for fluoride by both the IC and ISE Methods. Dissimilar results were reported, therefore, only the results reported from the ISE Method should be used.

For this event the following are collocated samples:

.

<u>SDG</u>	<u>SAMPLE</u>	<u>COLLOCATED SAMPLE</u>
10297680	502173	502600
10298055	502104	502601

Note: All parameters were reported to standard laboratory reporting limits (PQL) which approximate estimated quantitation limits (EQL) specified in the methods. The technical reviewer utilized the PQL values to conduct the precision analysis.

For this event all collocated sample precision was within specification.

For all parameters, the laboratories reported to their practical quantitation limits (PQL) and for levels below the PQL to the method detection limit (MDL) flagged with a “J” qualifier. The MDL described in 40 CFR Part 136, Appendix B and incorporated by reference in SW-846, provides a precision of ± 100 percent. With some exceptions the PQL values used by the laboratory, approximate the estimated quantitation limit (EQL) which is established at approximately 5-10X the MDL in SW-846. At 5X the MDL the EQL precision is approximately ± 30 percent. As a result reported positive but below the PQL, but above the MDL should be considered estimates. **The project manager is cautioned that the imprecision associated with the project-required reporting conventions must be taken into consideration when utilizing the data below the PQL.**

3.1.2 ACCURACY

Accuracy is the proximity of the reported analytical value to the true concentration in the sample. To estimate the proximity factor, laboratory control, laboratory blank and environmental samples are fortified with the parameter of interest, and for organics analysis, each sample is also fortified with surrogate indicators, and the level recovered, expressed as a percentage of the spiking level, is utilized. For laboratory control samples (LCS), the analytical values must be within either a published range or within laboratory or method established windows about the true concentration.

If these conditions are not met, the method is to be considered out of control, corrective action taken, and the entire process repeated with compliant LCS before the associated data can be reported. For elements, laboratory blanks are spiked with low-level reference materials for ICP (CRI). According to the Guidelines associated analytical values must fall within ± 20 percent of the true value or all the potential impact on all environmental sample results associated with the non-compliant CRI must be evaluated during technical review using professional judgment. The technical reviewer has considered that all associated sample results reported at values $<2PQL$ are evaluated for CRI recoveries <80 percent, both positive results and non-detects are flagged as estimated with the potential for low bias (J-), and for CRI recoveries >120 percent, positive results only are flagged as estimated with the potential for high bias (J+).

For the recovery of spiked parameter from environmental samples, the quantity of parameter matrix spiked (MS) must be large enough to be uniquely distinguishable from the level of native analyte present in the sample. When this condition exists, if the recovery value is outside established values, all associated environmental samples are flagged as estimated (J) with an indication of bias direction during technical review. The Guidelines establish that the native level of analyte must be less than four times the spiking level for valid accuracy estimation.

The formula utilized is as follows:

$$\text{Percent Recovery} = ((SSC - USC)/CS)100$$

Where: SSC = Spiked Sample Concentration
USC = Unspiked Sample Concentration
CS = Concentration Spiked

For elements, the QAPjP establishes acceptance criteria at 70-130 percent that are less stringent than the 75-125 percent specified in the Guidelines. The QAPjP does not specify accuracy criteria for water quality parameters. The technical reviewer has utilized the laboratory-derived limits, as required by SW-846 methods, and the more stringent 75-

125 percent criteria specified in the Guidelines where laboratory-established limits were not provided for the water quality parameters.

For elements analyzed by ICP, the method requires assessment of matrix interference by performing serial dilution analyses in addition to the matrix spike indicated above. The Guidelines suggest that, for samples containing sufficient signal in the undiluted sample (>50IDL) that the diluted result should be within 10 percent of the undiluted value to verify absence of interference.

Initial and continuing calibrations are performed to verify instrument performance and stability prior to and during the analysis of environmental samples. The Methods require that the initial calibration linearity coefficients are ≥ 0.995 , the continuing calibration stabilities are within 90-110 percent and, for elements, the Guidelines require consideration of blanks indicating a negative instrument drift >|IDL|. The technical reviewer has utilized the flagging criteria suggested in the Guidelines for lack of linearity and continuing calibration stability, and has utilized professional judgment for actions for non-compliant instrument drift associated with samples with levels reported at <5 IDL.

For SDG 10298055 sample 502114 provided MS/MSD recoveries of arsenic above the upper limit. The result reported for the element in the sample is flagged as estimated with the potential for high bias (J+). **This result is considered usable when the bias factors are taken into account. Doing so will have no impact on the decision since the adjusted values are above the Standards.**

For SDG 10298055 sample 502114 provided an ICP serial dilution result 11.4% higher than the undiluted value. The results reported for this element in all environmental samples associated with the SDG are flagged as estimated (J) to signify the indication of low bias. **These results are considered usable when the bias factor is taken into account. Doing so will have no impact on the decision since either the adjusted values are below or unadjusted values are above the Standards.**

For SDG 10297680 sample 502128 provided MS/MSD recoveries of chloride both above and below the lower limit. The results reported for this parameter in samples 502174, 502177, 502154, 502178, 502173, 502600, and 502147 associated with the batch are flagged as estimated with the potential for mixed bias (J). **These results are considered usable when the bias factors are taken into account. Doing so will have no impact on the decision since no Standard is established for the parameter.**

For this event all additional accuracy criteria were met.

3.1.3 REPRESENTATIVENESS

To perform a valid environmental assessment, the samples, when analyzed, must be representative of the media under study. Factors influencing representativeness include preparation of wells prior to sampling to obtain aliquots of the groundwater strata of interest. This is accomplished through purging of standing water to constant temperature, conductivity and pH prior to collecting the sample. Collocated samples are also collected to provide information regarding the ability to reproducibly collect a sample. If reproducibility is not obtained, representativeness is not verified. The sample must be collected with uncontaminated equipment, placed in uncontaminated containers, and not contaminated throughout the transport, receipt, storage, preparation and analytical processes. Evaluation of the potential for contamination is conducted through collection of field blanks, and utilization of laboratory process blanks. Once the sample has been collected, it is maintained in such a state that changes are not expected to occur in its concentration of target parameters. This is accomplished by chemical and physical preservation, and minimization of time from collection to analysis.

A review of the sample receipt logs indicate that preservation requirements were met, therefore, no action was taken.

Blanks were reported with some parameters present at concentrations that generated action levels resulting in the flagging of the positive values reported for several samples

as not-detected (U) at the reported values. *These results are considered usable as maximum potential concentrations.*

3.1.4 COMPARABILITY

The characteristic of comparability reflects both the internal consistency of measurements and the expression of results in units that are consistent with other organizations reporting similar data. Each value reported for a given measurement should be similar to other values within the same data set and with other related data sets. Comparability was assured through the use of standardized sampling procedures and USEPA analytical methods.

3.1.5 COMPLETENESS

Completeness is a measure of the extent of attainment of usable data points from an investigation. For this program a completeness goal of 85 percent is established in the QAPjP. The ability to obtain a sample, (human) error and sample characteristics are major contributors to reduced completeness. For this investigation, all intended samples were collected and received by the laboratory. The laboratory analyzed all of the samples for all of the intended parameters. Completeness for this event is, therefore, 100 percent.

3.1.6 CONSISTENCY

Consistency is a measure of the reasonableness of data to those that have been previously generated. For this program, an extensive data base has been developed that allows the evaluation of analytical results that may represent historical outliers. Based on a comparison to the historical results, a few sporadic differences were noted for this monitoring event; however, the overall results are within the existing variance.

4. REFERENCES

FMC, 1999. "RCRA Interim Status Groundwater Monitoring Plan", Bechtel Environmental, August 1999; as updated in the RCRA Post-Closure Plans as follows:

- Pond 9E post-closure plan, January 2000;
- Slag Pit Sump post-closure plan, September 2001;
- Pond 8E, Phase IV Ponds and Pond 15S post-closure plans, May 2002;
- Pond 16S post-closure plan, July 2003; and,
- Pond 17 and Pond 18 Cell A post-closure plans, August 2004.

USEPA, 2004. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, Final, USEPA, OSWER, EPA 540-R-04-004, October 2004.

USEPA, Contract Laboratory Program Statement of Work for Inorganics Analysis, Document Number ILM02.0 and latest revisions.

USEPA, 1989. Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses, USEPA Region I, June 13, 1988, Modified by Deborah Szaro, et. al. February 1989.

USEPA, 1983. Methods for Chemical Analysis of Water and Wastes, EMSL, EPA-600/4-79-020, Revised March 1983.

USEPA, 1986. Test Methods for Evaluating Solid Waste, OSWER, SW-846, Third Edition, November 1986.

APPENDIX A

TECHNICAL REVIEW REPORTS

ENVIRONMENTAL CHEMISTRY CONSULTANTS, INC.

10146 Banner Rd., S.E.
Olalla, WA 98359

Tel: (253) 509-4568

Data Technical Review Report
Groundwater Samples
FMC Corporation, Pocatello, Idaho
East Michaud Flats RFI
First Quarter 2015

SDGs 10297680 and 10298055

21 March 2015

Prepared by: Bruce K. Wallin, PhD

This memo summarizes the technical review of groundwater results generated by PASI-M for FMC's first quarter 2015 Resource Conservation and Recovery Act (RCRA) sampling event for the laboratory SDGs listed above. The samples associated with all SDGs were analyzed for elements and wet chemistries.

For elements laboratory analyses were performed in accordance with the U.S. Environmental Protection Agency (USEPA) SW-846 Methods, and for wet chemistries, methods from Standard Methods for Examining Water and Wastewater and Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983. All of the above methods are hereafter referred to as "Methods". A list of the parameters and associated methods utilized is provided in Table 1-1.

TECHNICAL REVIEW REPORT

SDG 10297680

ELEMENTAL PARAMETERS

TECHINCAL REVIEW REPORT
SDG 10297680
ELEMENTAL PARAMETERS

The data evaluation was based on USEPA SW-846 Method 6010B for cadmium and potassium, and 6020 for arsenic and selenium (Methods) and included the following parameters:

- calibration
- blanks
- * - ICP interference check sample
- matrix spike analysis
- duplicate sample analysis
- * - laboratory control sample analysis
- * - ICP serial dilution analysis
- * - ICPMS internal standard analysis
- detection limits
- overall assessment

* All criteria were met for this parameter.

Table A-1 summarizes the technical review actions that are detailed below.

Data validation, described in SW-846 and the Guidelines, which includes an evaluation of the usability of technically reviewed results with respect to project Data Quality Objectives and site chemistry knowledge, is included in the Data Validation/Usability Report.

BLANKS:

Blanks providing positive results and their associated action levels are tabulated below:

<u>BLANK ID.</u>	<u>ELEMENT</u>	<u>CONC. (mg/L)</u>	<u>ACTION LEVEL (mg/L)</u>
CCB 3/2-10:24	cadmium	0.00027	0.0014
CCB 3/2-11:15	cadmium	0.00025	0.0013
CCB 3/2-12:11	cadmium	0.00027	0.0014
CCB 3/2-13:12	cadmium	0.00037	0.0019

Associated samples with positive results reported below the action level:

<u>BLANK ID.</u>	<u>ELEMENT</u>	<u>ASSOCIATED SAMPLES</u>
CCB 3/2-12:11	cadmium	502131
CCB 3/2-13:12	cadmium	502131

Action:

- Associated sample result is flagged as not-detected at the reported value (U).

Comments:

Only calibration blanks bracketing the samples associated with the SDG were evaluated.

MATRIX SPIKE ANALYSIS:

Comments:

For the Method 6020 preparatory batch associated with samples 502127, 502124, 502126, 502149, 502148, 502147, 502180, 502172, and 502131 the laboratory included Batch QC matrix spike results. No action is taken since the Batch QC sample may not represent the matrix under study.

DUPLICATE SAMPLE ANALYSIS:

Comments:

For this SDG sample 502600 is collocated with sample 502173. For this collocated sample pair all precision limits specified in the QAPP were met.

DETECTION LIMITS:

For this SDG, the laboratory was required to report results to their method detection limit (MDL). The MDL (described in 40CFR Part 136, Appendix B and incorporated by reference in SW-846), provides an error band, by definition, of ± 100 percent. The Estimated Quantitation Limit (EQL), is established at 5-10X the MDL in SW-846.

Action:

- Positive results reported between the MDL and PQL are flagged as estimated (J).

Comments:

The data user is cautioned that these results may not be analytically reproducible or statistically valid.

OVERALL ASSESSMENT:

Calibration blanks were reported with cadmium present at concentrations that generated action levels resulting in the flagging of the positive result reported in sample 502131 as not-detected at the reported value (U).

Positive results reported below the PQL are flagged as estimated (J) due to uncertainty at the low level.

All additional QC results reviewed were within specification and no further actions or qualifiers were necessary.

TABLE A-1.
TECHNICAL REVIEW ACTION SUMMARY
SDG 10297680

Arsenic

Cadmium J1, U1

Potassium

Selenium

If the field is left blank no actions or qualifications were necessary.

J1 - Positive result is flagged as estimated (J) due to uncertainty at the low level.

U1 - Positive result is flagged as not-detected (U) due to blank contamination.

TECHNICAL REVIEW REPORT

SDG 10298055

ELEMENTAL PARAMETERS

TECHINCAL REVIEW REPORT
SDG 10298055
ELEMENTAL PARAMETERS

The data evaluation was based on USEPA SW-846 Method 6010B for cadmium, potassium, and phosphorus and 6020 for arsenic and selenium (Methods) and included the following parameters:

- calibration
- blanks
- * - ICP interference check sample
- matrix spike analysis
- duplicate sample analysis
- * - laboratory control sample analysis
- ICP serial dilution analysis
- * - ICPMS internal standard analysis
- detection limits
- overall assessment

* All criteria were met for this parameter.

Table A-2 summarizes the technical review actions that are detailed below.

Data validation, described in SW-846 and the Guidelines, which includes an evaluation of the usability of technically reviewed results with respect to project Data Quality Objectives and site chemistry knowledge, is included in the Data Validation/Usability Report.

CALIBRATION:

Low-level check standards (CRI) providing recoveries not within 90-110% are tabulated below:

<u>CRI ID.</u>	<u>ELEMENT</u>	<u>RECOVERY (%)</u>
3-6/08:21	phosphorus	112.4
3-6/09:32	phosphorus	127.2

Associated samples with positive results reported <2PQL: NONE

BLANKS:

Blanks providing positive results and their associated action levels are tabulated below:

<u>BLANK ID.</u>	<u>ELEMENT</u>	<u>CONC. (mg/L)</u>	<u>ACTION LEVEL (mg/L)</u>
CCB 3-2/16:25	cadmium	0.00046	0.0023
CCB 3-2/17:20	cadmium	0.00042	0.0021
CCB 3-4/11:42	cadmium	0.00029	0.0015
502701	arsenic	0.00026	0.0013

Associated samples with positive results reported below the action level:

<u>BLANK ID.</u>	<u>ELEMENT</u>	<u>ASSOCIATED SAMPLES</u>		
CCB 3-4/11:42	cadmium	502114	502104	502601

Action:

- Sample results are reported as not-detected at the reported value (U).

Comments:

Only calibration blanks bracketing the samples associated with the SDG were evaluated.

MATRIX SPIKE ANALYSIS:

Samples providing matrix spike (MS)/MS duplicate (MSD) recovery or precision not within the laboratory default limits when the native level is reported at less than four times the spiking level are tabulated below:

<u>SAMPLE ID.</u>	<u>ELEMENT</u>	<u>MS/MSD RECOVERY (%)</u>
502114	arsenic	132/125

Action:

- For both MS and MSD recoveries above the upper limit positive result reported for the element in the sample is flagged as estimated with the potential for high bias (J+).

Comments:

Only the spiked sample result is flagged since the MS/MSD recoveries were compliant for the remainder of samples in the SDG batch.

For sample 502157 the native level of potassium exceeded four times the spiking level, therefore, the parameter could not be evaluated.

DUPLICATE SAMPLE ANALYSIS:

Comments:

For this SDG sample 502601 is collocated with sample 502104. For this collocated sample pair all precision limits specified in the QAPP were met.

ICP SERIAL DILUTION ANALYSIS:

Samples with concentrations reported >50 MDL providing 5X serial dilution values not within 10% (%D) are tabulated below:

<u>SAMPLE</u>	<u>ELEMENT</u>	<u>%D</u>
502114	selenium	11.4

Action:

- Sample results reported for the element are flagged as estimated (J).

Comments:

The above action is applied to all environmental samples associated with the SDG.

The diluted value was larger than the undiluted value therefore low bias is indicated

DETECTION LIMITS:

For this SDG, the laboratory was required to report results to their method detection limit (MDL). The MDL (described in 40CFR Part 136, Appendix B and incorporated by reference in SW-846), provides an error band, by definition, of ± 100 percent. The Estimated Quantitation Limit (EQL), is established at 5-10X the MDL in SW-846.

Action:

- Positive results reported between the MDL and PQL are flagged as estimated (J).

Comments:

The data user is cautioned that these results may not be analytically reproducible or statistically valid.

OVERALL ASSESSMENT:

A calibration blank was reported with cadmium present at a concentration that generated an action level resulting in the flagging of the positive results reported in samples 502114, 502104, and 502601 as not-detected at the reported value (U).

For sample 502114 the MS/MSD recoveries of arsenic were above the limits and the positive result reported in the sample is flagged as estimated with the potential for high bias (J+).

Sample 502114 provided an ICP serial dilution value for selenium that was 11.4% larger than the undiluted value. The results reported for this element in all environmental samples associated with the SDG are flagged as estimated (J).

Positive results reported between the MDL and PQL are flagged as estimated (J) due to uncertainty at the low level.

All additional QC results reviewed were within specification and no further actions or qualifiers were necessary.

TABLE A-2.
TECHNICAL REVIEW ACTION SUMMARY
SDG 10298055

Arsenic	J1, J+1
Cadmium	J1, U1
Potassium	
Selenium	J1, J2
Phosphorus	

If the field is left blank no actions or qualifications were necessary.

- J1 - Positive result is flagged as estimated (J) due to uncertainty at the low level.
- J2 - Result is flagged as estimated (J) due to non-compliant serial dilution reproducibility.
- J+1 - Positive result is flagged as estimated with the potential for high bias (J+) due to non-compliant MS/MSD recoveries.
- U1 - Positive result is flagged as not-detected at the reported value (U) due to blank contamination.

TECHNICAL REVIEW REPORT

SDG 10297680

WET CHEMISTRIES

TECHNICAL REVIEW REPORT
SDG 10297680
WET CHEMISTRIES

The data evaluation was based on the procedures set forth in the Methods and included the following parameters:

- * - holding times
- * - calibration
 - blanks
 - matrix spike sample analysis
- * - standard reference material analysis
 - duplicate sample analysis
 - detection limits
 - overall assessment

* All criteria were met for this parameter.

Data validation, described in SW-846 and the Guidelines, which includes an evaluation of the usability of technically reviewed results with respect to project Data Quality Objectives and site chemistry knowledge, is included in the Data Validation/Usability Report.

A glossary of data qualifier definitions is presented in Appendix B.

BLANKS:

Blanks reported with positive values and their associated 5X action levels (AL) are tabulated below:

<u>BLANK ID.</u>	<u>PARAMETER</u>	<u>CONC. (mg/L)</u>	<u>AL (mg/L)</u>
502700	fluoride (300.0)	0.0070	0.035

	nitrate-N	0.050	0.25
502CDI	o-phosphate-P	0.0074	0.037

Associated samples with values reported positive but below the action level:

<u>BLANK ID.</u>	<u>PARAMETER</u>	<u>ASSOCIATED SAMPLES</u>	
502CDI	o-phosphate-P	502174	502177
		502154	502178
		502173	502600
		502147	

Action:

- Associated positive sample results are flagged as not-detected at the reported value (U).

Comments:

The data user is cautioned that for the field blanks the actions may not apply directly to the indicated samples (e.g. the contamination is in the blank water per-se).

MATRIX SPIKE SAMPLE ANALYSIS:

Samples providing matrix spike (MS)/MS duplicate (MSD) recoveries or precision not within the laboratory default limits when the native level is reported at less than four times the spiking level are tabulated below:

<u>SAMPLE ID.</u>	<u>ANALYTE</u>	<u>MS/MSD RECOVERY (%)</u>
502128	chloride	137/81
	sulfate	118/
502131	chloride	116/
	fluoride (300.0)	0/0*
	sulfate	116/

*Interference artefact.

Action:

- For MS and MSD recoveries above and below the limits sample results reported for the analyte are flagged as estimated (J).

Comments:

For recoveries above and below the limit mixed bias is indicated.

The above action is applied to samples 502174, 502177, 502154, 502178, 502173, 502600, and 502147 which are associated with the batch.

For sample 502178 the native level of nitrate-N is reported at >4 times the spiking level, therefore, this parameter could not be evaluated.

For nitrate-N and o-phosphate P the batch associated with samples 502127, 502124, 502126, 502149, 502148, 502147, 502180, 502172, and 502131 the laboratory included Batch QC matrix spike results. No action is taken since the Batch QC sample may not represent the matrix under study.

DUPLICATE SAMPLE ANALYSIS

1. Sample 502131 was analyzed for fluoride by IC and ISE Methods and the result reported by the IC Method was substantially higher than the ISE Method. Only the result reported from the ISE Method should be used.
2. Field Duplicates.

Comments:

For this SDG sample 502600 is collocated with sample 502173. For this collocated sample pair all precision limits specified in the QAPP were met.

DETECTION LIMITS:

1. For this SDG, the laboratory was required to report results to their method detection limit (MDL). The MDL (described in 40CFR Part 136, Appendix B and incorporated by reference in SW-846), provides an error band, by definition, of \pm 100 percent. The Estimated Quantitation Limit (EQL) is established at 5-10X the MDL in SW-846.

Action:

- Positive values reported between the MDL and PQL are flagged as estimated (J).

Comments:

Any values below the PQL contain inherently increasing error bands as the numbers become smaller. It is essential that the data user considers these statistical impacts on data quality at the low levels.

OVERALL ASSESSMENT:

The Culligan Deionized Water blank was reported with o-phosphate-P present at a concentration that generated an action level resulting in the flagging of the positive results reported for samples 502174, 502177, 502154, 502178, 502173, 502600, and 502147 as not-detected at the reported value (U).

The results reported for chloride in samples 502174, 502177, 502154, 502178, 502173, 502600, and 502147 are flagged as estimated (J) due to non-compliant MS/MSD recoveries indicating mixed bias.

Any values reported positive between the MDL and PQL are flagged as estimated (J) due to uncertainty at the low levels.

Sample 502131 was analyzed for fluoride by IC and ISE Methods and the result reported by the IC Method was substantially higher than the ISE Method. Only the result reported from the ISE Method should be used.

All additional QC criteria evaluated were within specification and no further actions or flagging were required or deemed necessary.

TECHNICAL REVIEW REPORT

SDG 10298055

WET CHEMISTRIES

TECHNICAL REVIEW REPORT

SDG 10298055

WET CHEMISTRIES

The data evaluation was based on the procedures set forth in the Methods and included the following parameters:

- holding times
- * - calibration
- blanks
- matrix spike sample analysis
- * - standard reference material analysis
- duplicate sample analysis
- detection limits
- overall assessment

* All criteria were met for this parameter.

Data validation, described in SW-846 and the Guidelines, which includes an evaluation of the usability of technically reviewed results with respect to project Data Quality Objectives and site chemistry knowledge, is included in the Data Validation/Usability Report.

A glossary of data qualifier definitions is presented in Appendix B.

HOLDING TIMES:

The following samples were analyzed outside the indicated method-specified holding time from sample collection to analysis:

<u>SAMPLE ID.</u>	<u>PARAMETER</u>	<u>HOLDING TIME (HOURS)</u>
502115	nitrate-N	51
	o-phosphate-P	51

<u>SAMPLE ID.</u>	<u>PARAMETER</u>	<u>HOLDING TIME (HOURS)</u>
502113	nitrate-N	52
	o-phosphate-P	52
502166	nitrate-N	52
	o-phosphate-P	52
502168	nitrate-N	53
502165	nitrate-N	49
502167	nitrate-N	48.5
502114	nitrate-N	50
	o-phosphate-P	51

Action:

- None, see comments.

Comments:

No action is taken since a FMC keeping quality study indicated that these parameters are stable beyond the above-indicated holding times.

BLANKS:

Blanks reported with positive values and their associated 5X action levels are tabulated below:

<u>BLANK ID.</u>	<u>PARAMETER</u>	<u>CONC. (mg/L)</u>	<u>ACTION LEVEL</u>
502701	fluoride (IC)	0.0090	0.045
	o-phosphate-P	0.0087	0.044

Associated samples with values reported positive but below the action level: NONE

MATRIX SPIKE SAMPLE ANALYSIS:

Samples providing matrix spike (MS)/MS duplicate (MSD) recoveries or precision not within the laboratory default limits when the native level is reported at less than four times the spiking level are tabulated below:

<u>SAMPLE ID. (BATCH)</u>	<u>ANALYTE</u>	<u>MS/MSD RECOVERY (%)</u>
502114 (22038)	fluoride (IC)	119/113
502123 (22046)	fluoride (IC)	78/86
	nitrate-N	79/68
502157 (22046)	chloride	82/85
	sulfate	82/84

Action:

- For both MS and MSD recoveries below the lower limit sample results reported for the analyte are flagged as estimated with the potential for low bias (J-).
- For both MS and MSD recoveries above the upper limit positive sample results reported for the analyte are flagged as estimated with the potential for high bias (J+).

Comments:

The above actions are applied to all environmental samples in the associated batch associated with the SDG.

For sample 502123 the native levels of chloride and sulfate were reported at greater than four times the spiking level, therefore, this parameter could not be evaluated.

DUPLICATE SAMPLE ANALYSIS

Samples 502156 and 502157 were analyzed for fluoride by IC and ISE Methods with the following results not within the precision limits expected for laboratory replicates:

<u>SAMPLE ID.</u>	<u>IC (mg/L)</u>	<u>ISE (mg/L)</u>
502156	44.5	ND (0.5)
502157	27.7	ND (0.5)

For these samples only the results reported from the ISE Method should be used. Sample 502155 was also analyzed for fluoride by the IC and ISE Methods and the results agreed within the stated precision limits.

For this SDG sample 502601 is collocated with sample 502104. For this collocated sample pair all precision limits specified in the QAPP were met.

DETECTION LIMITS:

For this SDG the laboratory was required to report results to their method detection limit (MDL). The MDL (described in 40CFR Part 136, Appendix B and incorporated by reference in SW-846), provides an error band, by definition, of ± 100 percent. The Estimated Quantitation Limit (EQL) is established at 5-10X the MDL in SW-846.

Action:

- Positive values reported between the MDL and PQL are flagged as estimated (J).

Comments:

Any values below the PQL contain inherently increasing error bands as the numbers become smaller. It is essential that the data user considers these statistical impacts on data quality at the low levels.

OVERALL ASSESSMENT:

Sample 502114 provided MS/MSD recoveries of fluoride (IC) above the upper limit. Sample 502123 provided MS/MSD recoveries of fluoride (IC) and nitrate-N below the lower limit. Sample 502157 provided recoveries of chloride and sulfate below the lower limit. The results reported for these parameters in all environmental samples associated with the batch are flagged as estimated with the potential for high bias (J+) and estimated with the potential for low bias (J-), respectively.

For samples 502156 and 502157 only the results reported for fluoride from the ISE Method should be used due to indication of interference in the IC method.

Any values reported positive between the MDL and PQL are flagged as estimated (J) due to uncertainty at the low levels.

All additional QC criteria evaluated were within specification and no further actions or flagging were required or deemed necessary.

APPENDIX B

DEFINITION OF DATA QUALIFIERS

GLOSSARY OF DATA QUALIFIERS

- J - The associated value is an estimated quantity.
- R - The data are unusable.
- U - The parameter is not detected at the reported value.
- B - The value is above the MDL or IDL but below the RL, or CRDL.

APPENDIX C

GLOSSARY OF ACRONYMS

GLOSSARY OF ACRONYMS

SDG	-	Sample Delivery Group
USEPA	-	Unites States Environmental Protection Agency
DQO	-	Data Quality Objectives
QAPjP	-	Quality Assurance Project Plan
RPD	-	Relative Percent Difference
CRDL	-	Contract Required Detection Limit
RL	-	Reporting Limit
IDL	-	Instrument Detection Limit
MDL	-	Method Detection Limit
CLP	-	Contract Laboratory Program
ICP	-	Ion Coupled Plasma
MS	-	Matrix Spike
MSD	-	Matrix Spike Duplicate

DATA PACKAGE REPORT
SAMPLE DELIVERY GROUP
RCRA SDG
10297680

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502124 Lab ID: 10297680012 Collected: 02/24/15 17:25 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 12:03	7440-43-9	
Potassium	12.2	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 12:03	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0092	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:06	7440-38-2	
Selenium	0.0035	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:06	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	197	mg/L	6.0	3.0	5		02/26/15 17:23	16887-00-6	
Fluoride	0.74	mg/L	0.050	0.0060	1		02/26/15 13:45	16984-48-8	
Nitrate as N	3.0	mg/L	0.10	0.050	1		02/26/15 13:45	14797-55-8	
Sulfate	90.7	mg/L	1.2	0.60	1		02/26/15 13:45	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:47	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.086	mg/L	0.0050	0.0025	1		02/26/15 13:16		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA

Pace Project No.: 10297680

Sample: 502126 Lab ID: 10297680013 Collected: 02/24/15 16:40 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 12:15	7440-43-9	
Potassium	9.6	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 12:15	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0079	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:10	7440-38-2	
Selenium	0.0024	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:10	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	94.9	mg/L	1.2	0.60	1		02/26/15 14:00	16887-00-6	
Fluoride	0.87	mg/L	0.050	0.0060	1		02/26/15 14:00	16984-48-8	
Nitrate as N	2.2	mg/L	0.10	0.050	1		02/26/15 14:00	14797-55-8	
Sulfate	86.4	mg/L	1.2	0.60	1		02/26/15 14:00	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:49	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.063	mg/L	0.0050	0.0025	1		02/26/15 13:17		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502127 Lab ID: 10297680010 Collected: 02/24/15 16:05 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 11:51	7440-43-9	
Potassium	14.0	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 11:51	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0072	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 11:57	7440-38-2	
Selenium	0.0065	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 11:57	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	324	mg/L	12.0	6.0	10		02/26/15 17:06	16887-00-6	
Fluoride	0.53	mg/L	0.050	0.0060	1		02/26/15 13:14	16984-48-8	
Nitrate as N	5.5	mg/L	0.10	0.050	1		02/26/15 13:14	14797-55-8	
Sulfate	210	mg/L	12.0	6.0	10		02/26/15 17:06	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:45	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.078	mg/L	0.0050	0.0025	1		02/26/15 13:13		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502128 Lab ID: 10297680009 Collected: 02/24/15 13:25 Received: 02/25/15 11:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 11:45	7440-43-9	
Potassium	18.1	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 11:45	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.014	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:52	7440-38-2	
Selenium	0.0046	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:52	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	395	mg/L	12.0	6.0	10		02/25/15 20:25	16887-00-6	M6
Fluoride	0.39	mg/L	0.050	0.0060	1		02/25/15 15:13	16984-48-8	
Nitrate as N	7.3	mg/L	0.10	0.050	1		02/25/15 15:13	14797-55-8	M1
Sulfate	142	mg/L	12.0	6.0	10		02/25/15 20:25	14808-79-8	M6
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		02/26/15 10:56	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.15	mg/L	0.0050	0.0025	1		02/25/15 13:48		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502131 Lab ID: 10297680019 Collected: 02/25/15 11:15 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	0.00031	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 12:46	7440-43-9	
Potassium	13.5	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 12:46	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.052	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:38	7440-38-2	
Selenium	0.00078	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:38	7782-49-2	
SM4500F-C Fluoride									
Analytical Method: SM 4500F/C									
Fluoride	ND	mg/L	1.0	0.50	1		03/07/15 12:32	16984-48-8	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	215	mg/L	12.0	6.0	10		02/26/15 19:57	16887-00-6	M6
Fluoride	80.1 1	mg/L	5.0	0.60	100		02/27/15 13:44	16984-48-8	M6
Nitrate as N	ND	mg/L	0.10	0.050	1		02/26/15 16:01	14797-55-8	
Sulfate	173	mg/L	12.0	6.0	10		02/26/15 19:57	14808-79-8	M6
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	0.034	mg/L	0.040	0.020	1		03/05/15 11:57	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	8.0	mg/L	0.25	0.12	50		02/26/15 13:27		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502147 Lab ID: 10297680016 Collected: 02/25/15 08:15 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 12:29	7440-43-9	
Potassium	11.4	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 12:29	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0047	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:24	7440-38-2	
Selenium	0.0046	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:24	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	165	mg/L	6.0	3.0	5		02/26/15 18:16	16887-00-6	
Fluoride	0.65	mg/L	0.050	0.0060	1		02/26/15 14:45	16984-48-8	
Nitrate as N	4.3	mg/L	0.10	0.050	1		02/26/15 14:45	14797-55-8	
Sulfate	65.8	mg/L	1.2	0.60	1		02/26/15 14:45	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:54	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.026 U	mg/L	0.0050	0.0025	1		02/26/15 13:20		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502148 Lab ID: 10297680015 Collected: 02/24/15 18:40 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 12:25	7440-43-9	
Potassium	13.0	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 12:25	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0064	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:19	7440-38-2	
Selenium	0.0056	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:19	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	198	mg/L	6.0	3.0	5		02/26/15 17:59	16887-00-6	
Fluoride	0.70	mg/L	0.050	0.0060	1		02/26/15 14:30	16984-48-8	
Nitrate as N	3.9	mg/L	0.10	0.050	1		02/26/15 14:30	14797-55-8	
Sulfate	107	mg/L	6.0	3.0	5		02/26/15 17:59	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:53	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.060	mg/L	0.0050	0.0025	1		02/26/15 13:19		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502149 Lab ID: 10297680014 Collected: 02/24/15 18:05 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 12:20	7440-43-9	
Potassium	11.4	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 12:20	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0076	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:15	7440-38-2	
Selenium	0.0026	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:15	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	141	mg/L	6.0	3.0	5		02/26/15 17:41	16887-00-6	
Fluoride	0.95	mg/L	0.050	0.0060	1		02/26/15 14:15	16984-48-8	
Nitrate as N	2.1	mg/L	0.10	0.050	1		02/26/15 14:15	14797-55-8	
Sulfate	60.0	mg/L	1.2	0.60	1		02/26/15 14:15	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:51	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.062	mg/L	0.0050	0.0025	1		02/26/15 13:18		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502154 Lab ID: 10297680003 Collected: 02/24/15 10:15 Received: 02/25/15 11:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 11:06	7440-43-9	
Potassium	13.2	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 11:06	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0046	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:20	7440-38-2	
Selenium	0.0032	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:20	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	208	mg/L	6.0	3.0	5		02/25/15 18:27	16887-00-6	
Fluoride	0.98	mg/L	0.050	0.0060	1		02/25/15 13:42	16984-48-8	
Nitrate as N	2.8	mg/L	0.10	0.050	1		02/25/15 13:42	14797-55-8	
Sulfate	55.1	mg/L	1.2	0.60	1		02/25/15 13:42	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		02/26/15 10:47	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.024	mg/L	0.0050	0.0025	1		02/25/15 13:41		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502171 Lab ID: 10297680008 Collected: 02/24/15 12:45 Received: 02/25/15 11:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 11:40	7440-43-9	
Potassium	20.7	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 11:40	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.018	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:49	7440-38-2	
Selenium	0.0029	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:49	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	220	mg/L	6.0	3.0	5		02/25/15 20:08	16887-00-6	
Fluoride	0.50	mg/L	0.050	0.0060	1		02/25/15 14:57	16984-48-8	
Nitrate as N	5.3	mg/L	0.10	0.050	1		02/25/15 14:57	14797-55-8	
Sulfate	89.1	mg/L	1.2	0.60	1		02/25/15 14:57	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		02/26/15 10:52	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.10	mg/L	0.0050	0.0025	1		02/25/15 13:47		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502172 Lab ID: 10297680018 Collected: 02/25/15 10:10 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 12:41	7440-43-9	
Potassium	24.0	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 12:41	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.022	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:33	7440-38-2	
Selenium	0.0040	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:33	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	133	mg/L	6.0	3.0	5		02/26/15 19:40	16887-00-6	
Fluoride	0.54	mg/L	0.050	0.0060	1		02/26/15 15:46	16984-48-8	
Nitrate as N	9.7	mg/L	0.50	0.25	5		02/26/15 19:40	14797-55-8	
Sulfate	73.1	mg/L	1.2	0.60	1		02/26/15 15:46	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:56	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.34	mg/L	0.025	0.012	5		02/26/15 13:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502173 Lab ID: 10297680005 Collected: 02/24/15 11:55 Received: 02/25/15 11:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 11:26	7440-43-9	
Potassium	12.6	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 11:26	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0033	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:26	7440-38-2	
Selenium	0.0042	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:26	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	243	mg/L	6.0	3.0	5		02/25/15 19:02	16887-00-6	
Fluoride	0.81	mg/L	0.050	0.0060	1		02/25/15 14:12	16984-48-8	
Nitrate as N	3.3	mg/L	0.10	0.050	1		02/25/15 14:12	14797-55-8	
Sulfate	67.8	mg/L	1.2	0.60	1		02/25/15 14:12	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		02/26/15 10:49	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.018	mg/L	0.0050	0.0025	1		02/25/15 13:42		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502174 Lab ID: 10297680001 Collected: 02/24/15 08:30 Received: 02/25/15 11:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 10:38	7440-43-9	
Potassium	11.1	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 10:38	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0037	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:32	7440-38-2	
Selenium	0.0050	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:32	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	217	mg/L	6.0	3.0	5		02/25/15 17:51	16887-00-6	
Fluoride	0.68	mg/L	0.050	0.0060	1		02/25/15 13:11	16984-48-8	
Nitrate as N	4.6	mg/L	0.10	0.050	1		02/25/15 13:11	14797-55-8	
Sulfate	93.8	mg/L	1.2	0.60	1		02/25/15 13:11	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		02/26/15 10:45	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.024	mg/L	0.0050	0.0025	1		02/25/15 13:39		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502177 Lab ID: 10297680002 Collected: 02/24/15 09:35 Received: 02/25/15 11:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 10:43	7440-43-9	
Potassium	12.0	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 10:43	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0042	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:18	7440-38-2	
Selenium	0.0043	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:18	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	193	mg/L	6.0	3.0	5		02/25/15 18:09	16887-00-6	
Fluoride	0.66	mg/L	0.050	0.0060	1		02/25/15 13:27	16984-48-8	
Nitrate as N	4.1	mg/L	0.10	0.050	1		02/25/15 13:27	14797-55-8	
Sulfate	70.6	mg/L	1.2	0.60	1		02/25/15 13:27	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		02/26/15 10:47	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.025	mg/L	0.0050	0.0025	1		02/25/15 13:40		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502178 Lab ID: 10297680004 Collected: 02/24/15 10:55 Received: 02/25/15 11:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 11:19	7440-43-9	
Potassium	20.5	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 11:19	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0092	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:23	7440-38-2	
Selenium	0.0057	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:23	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	612	mg/L J	12.0	6.0	10		02/25/15 18:44	16887-00-6	
Fluoride	0.29	mg/L	0.050	0.0060	1		02/25/15 13:57	16984-48-8	
Nitrate as N	5.8	mg/L	0.10	0.050	1		02/25/15 13:57	14797-55-8	
Sulfate	394	mg/L	12.0	6.0	10		02/25/15 18:44	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		02/26/15 10:48	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.035 U	mg/L	0.0050	0.0025	1		02/25/15 13:41		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502180 Lab ID: 10297680017 Collected: 02/25/15 09:05 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 12:34	7440-43-9	
Potassium	35.3	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 12:34	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.041	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:29	7440-38-2	
Selenium	0.0036	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:29	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	128	mg/L	12.0	6.0	10		02/26/15 18:34	16887-00-6	
Fluoride	0.59	mg/L	0.050	0.0060	1		02/26/15 15:00	16984-48-8	
Nitrate as N	37.7	mg/L	1.0	0.50	10		02/26/15 18:34	14797-55-8	
Sulfate	108	mg/L	12.0	6.0	10		02/26/15 18:34	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:55	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.45	mg/L	0.025	0.012	5		02/26/15 13:25		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502600 Lab ID: 10297680006 Collected: 02/24/15 12:30 Received: 02/25/15 11:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 11:30	7440-43-9	
Potassium	12.4	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 11:30	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	0.0033	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:29	7440-38-2	
Selenium	0.0043	mg/L	0.00050	0.00025	1	02/26/15 10:41	02/27/15 12:29	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	246	mg/L	6.0	3.0	5		02/25/15 19:50	16887-00-6	
Fluoride	0.80	mg/L	0.050	0.0060	1		02/25/15 14:27	16984-48-8	
Nitrate as N	3.3	mg/L	0.10	0.050	1		02/25/15 14:27	14797-55-8	
Sulfate	67.8	mg/L	1.2	0.60	1		02/25/15 14:27	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		02/26/15 10:50	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	0.021	mg/L	0.0050	0.0025	1		02/25/15 13:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: FMC RCRA
Pace Project No.: 10297680

Sample: 502700 Lab ID: 10297680011 Collected: 02/24/15 17:05 Received: 02/26/15 11:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Cadmium	ND	mg/L	0.0030	0.00025	1	02/27/15 12:27	03/02/15 11:58	7440-43-9	
Potassium	ND	mg/L	2.5	1.2	1	02/27/15 12:27	03/02/15 11:58	7440-09-7	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3020									
Arsenic	ND	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:01	7440-38-2	
Selenium	ND	mg/L	0.00050	0.00025	1	02/27/15 10:45	03/02/15 12:01	7782-49-2	
300.0 IC Anions									
Analytical Method: EPA 300.0									
Chloride	ND	mg/L	1.2	0.60	1		02/26/15 13:29	16887-00-6	
Fluoride	0.0070 J	mg/L	0.050	0.0060	1		02/26/15 13:29	16984-48-8	
Nitrate as N	0.050 J	mg/L	0.10	0.050	1		02/26/15 13:29	14797-55-8	
Sulfate	ND	mg/L	1.2	0.60	1		02/26/15 13:29	14808-79-8	
350.1 Ammonia									
Analytical Method: EPA 350.1									
Nitrogen, Ammonia	ND	mg/L	0.040	0.020	1		03/05/15 11:46	7664-41-7	
Phosphate, Ortho Low Level									
Analytical Method: SM 4500-P E									
Orthophosphate as P	ND	mg/L	0.0050	0.0025	1		02/26/15 13:16		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..